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A Natural Childbirth Program*

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NOTHING has been more remarkable in the practice of obstetrics within the last ten years than the increasing appreciation of the values of principles enunciated by Edmund Jacobson in 1929 in his book *Progressive Relaxation,* and afterwards applied to midwifery by Grantly Dick Read in his two books, *Natural Childbirth* and *Revelations of Childbirth."* [1] This statement by Dr. F. J. Browne, Professor of Obstetrics at the University of London demands the consideration due to high authority. After a somewhat extended experience with the clinical application of the principles referred to, the authors of this presentation express full agreement with the evaluation set down by Professor Browne. It is therefore the purpose of this communication to review briefly our Natural Childbirth Program, the results obtained, and to comment on its significance in present-day obstetrical procedure.

The term "Natural Childbirth" is somewhat unfortunate, in that it implies that easy and relatively painless childbirth occurs in primitive tribes and ancient cultures. Dr. Dick Read's book *Childbirth Without Fear* [2] obviously written for the lay reader, supports the view that, without culture, parturition is relatively painless. However, until there has been a wider and more systematic study of primitive obstetrics there can be no answer to the question. Most of the anthropological studies in this field now available do not support this view. Unfortunately, the term "Natural Childbirth" has been misinterpreted by the press in many instances as being synonymous with painless childbirth, but the fact is that neither Dr. Dick Read nor other writers on the subject have ever claimed that childbirth should be conducted without anesthetic aids, or that the Natural Childbirth regimen renders labor devoid of pain. Under the program most patients do have discomfort or pain to some extent, and analgesics and anesthetics are used whenever they are indicated, usually whenever the patient desires them.

Our interest in the subject began in

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1947 when a young primigravida entered our wards early in labor and asked if she could have her baby according to the principles set down by Dr. Dick Read. She went through her labor without anesthesia, with satisfaction to herself and with great interest on the part of those who were in attendance. Shortly after that, other patients expressed a similar desire, an interest which we were glad to foster. In the six months following the first demonstration we delivered sixteen such patients, an experience which convinced us that the matter deserved more concentrated study on our part. We were anxious to learn whether these principles could be applied to a teaching ward obstetrical service. This problem offered apparent difficulties because the success of the program, as set down by Dr. Dick Read and others, implied that an unusual patient-physician relationship was a primary requisite, and also a high degree of coöperative intelligence on the part of the patient. In a teaching ward service devoted to instructing medical students and nurses it appeared that incorporating these principles offered certain difficulties. The success of our efforts under such circumstances should refute any idea that hypnotism or suggestion therapy is any part of the program.

In definition, we would say that our program emphasizes that childbirth is a natural, normal process of the body and that it is important that the prospective mother recognize that bringing a baby into the world is a coöperative endeavor in which she plays the principal role. In support of this we emphasize that in addition to the usual prenatal program the education of the woman for the act of childbirth emotionally and physically is important, and that sympathetic and continuous attention during actual labor must be maintained.

The first report of our experience appeared in November, 1948, giving our results in 156 patients, 93 primigravidae and 63 multigravidae. In conclusion we stated, "natural childbirth is a definite entity which can be taught successfully in a teaching ward service. We believe that natural childbirth techniques offer decided advantages to mother and child and are psychologically desirable for most women."[3] Since August 1, 1948, the Natural Childbirth Program has been carried out as much as possible on all ward and private staff patients, and at the present a total of over 800 patients have been delivered under these conditions.

In brief outline our educational program is as follows: first, the expectant mother receives simple instructions in the anatomy and physiology of pregnancy and labor, and second, she is trained in the use of her body to aid the natural forces of labor. This is carried out by "lectures" given by a physician and by exercise classes given by a nurse. In the lectures, matters of misinformation are corrected by simple, easily understandable explanation of pregnancy and of labor, so that the prospective mother knows the explanation for each new experience, and through understanding is relieved of unnecessary fear — fear arising from ignorance. In the exercise classes muscular relaxation technics and postural and breathing exercises are learned. The nurse, also by talks and demonstrations, reinforces the lectures given by the physician. Charts, and blackboard diagrams are used freely and general discussion is encouraged. One lecture and two exercise classes are given early in pregnancy and the same number are given during the last trimester. The most important part of the program is the "support" given during labor. This consists of aiding the patient to put into practice the relaxation and other techniques which she has learned previously. *No patient in active labor is left alone.* In the early part of labor the husband, a student nurse, or a medical student

may be with the patient. At a later period, a nurse, a physician or both will be present. An ideal which we try to carry out is to have the same physicians and nurses attend in labor those patients whom they have attended prenatally either in clinic or classes. In this we have been reasonably successful and this desirable sequence is no doubt an important factor in the success of our program. Nevertheless, we have had considerable success with patients who have been attended in labor by persons entirely strange to them.

Something of our results may be seen in a more recent report [4] on 546 patients who delivered vaginally on our service. In this group there were 46 operative deliveries (38 primigravidae, 8 multigravidae), an operative incidence of 8.4 per cent. In the 500 spontaneous deliveries there were 200 primigravidae and 300 multigravidae. As we have previously stated, analgesics and anesthetics are not withheld from these patients and are given usually whenever the patient desires them. If used, a minimum amount usually suffices, 50–100 mg. demerol during the first stage and whiffs of nitrous oxide-oxygen during the second stage, or both. Of interest is the state of consciousness of the mother at the birth of the baby:

In the 200 primigravidae, 178, or 89.0 per cent, were fully conscious; 16, or 8.0 per cent, were semiconscious; 6, or 3.0 per cent, were unconscious. In the 300 multigravidae, 282, or 94.0 per cent, were fully conscious; 8, or 2.6 per cent, were semiconscious; 10, or 3.3 per cent, were unconscious. Thus 460 of the 500 patients (92.0 per cent) were fully conscious at the birth of their babies.

In the foregoing we have endeavored to give a statement of the operation of our Natural Childbirth Program. It is no doubt of interest to this audience to point out what we consider to be its advantages over the usual type of care given to obstetrical patients. In this regard it is important to consider the fact that in this country 85 per cent of all deliveries occur in hospitals; in our own state (Connecticut) this figure is 99.3 per cent. Obstetrical care in the past few decades has therefore become almost wholly institutionalized. This practice offers striking contrast to the day when patients were delivered in their homes, usually by the family physician. This is emphasized because at that time the physician undoubtedly gave a good deal of the same type of labor "support" which we consider such an important part of our program.

Consideration of the advantages of the program should be given from two points of view, that of the physician and that of the patient. From the former viewpoint is the increased safety to mother and child. Any program of obstetrical care in which the use of analgesics and anesthetics can be largely minimized or dispensed with, will promote shorter labor, lessened bleeding, less necessity for new-born resuscitation, and fewer operative deliveries. The program is further of advantage to the physician because it greatly aids him in fulfilling a responsibility, more and more recognized as his, in guiding and aiding the patient's psychologic approach to, and her entrance into, motherhood. This aspect of childbirth cannot be ignored if we are to accept the implications of psychological investigators of the emotional value to the woman of the whole childbirth experience.

The Natural Childbirth Program should be welcomed by the obstetrician as a change from a system where drugs alone are relied upon to counteract the fear-tension-pain syndrome which all women facing labor exhibit to a greater or lesser degree, a system in which patients are drugged into varying degrees of unconsciousness and often require restraint, to a system in which consciousness and coöperation of the patient are outstanding features and

the patient knows and does what is expected of her; a system in which she is carried through her experience with enthusiastic interest on the part of all who are in attendance. Such changes obviously transform an obstetrical service in a manner which must be experienced to be fully appreciated. To the best of our knowledge, no obstetrician who has given the principles of natural childbirth a thorough and sympathetic trial has ever been willing to abandon it.

When we consider the advantages to the patient, aside from the safety factors previously mentioned, we must take into consideration the results of research on the part of psychologists and others, who pronounce that a conscious childbirth experience is of emotional importance to the parturient woman. We must likewise take into consideration, from similar sources, the recommendations that healthy mother and child relationships should begin not with birth but months before that event.

We have attempted to learn something of the reaction of the new mother to her experience by means of a questionnaire, which the mother is asked to fill out on her third postpartum day. It is not obligatory and we have in our files some 600 of these documents. These replies, giving various likes and dislikes related to the program and general reactions to that program have given us significant help in evaluating this aspect, and also in correcting some of our sins of omission and commission. Often the statements are quite revealing, as is noted in the following from a patient telling of a previous delivery elsewhere. We quote, "An oblivious delivery is completely unsatisfactory. When I regained consciousness and was told I had a son, I remember feeling cheated, having to be informed just as if I hadn't even been present at the delivery. The whole process is so highly interesting that it is really stupid to black out just when things are culminating to a peak of interest. I couldn't help looking at my son for a week or so afterward and feeling as if I'd won a Packard in a lottery."

Most of the important psychological reactions to labor exhibited by the patient, which Dr. Dick Read and others have commented upon, have been repeated in our experience, namely, the great interest of the patient in the labor experience, and the putting into practice of the relaxation and other technics. Her interest in the actual birth process and her elation at its completion are striking affirmations of the statement of Dr. Helene Deutsch that, "childbirth is the greatest and most gratifying experience of woman, perhaps of human beings."[5]

In connection with our program, mention should be made of classes for fathers and parents-to-be in which an obstetrician, a pediatrician, and a psychiatrist take part. Also we should speak of the rooming-in arrangement in which mothers and babies are hospitalized together. After a 3 year experience with this plan, first with one four-bed unit and more recently with two, we wholeheartedly accept the rooming-in arrangement as an integral part of, not an adjunct to, the Natural Childbirth Program. The advantages in safety for the baby from certain nursery infections, the advantages to the mother in learning to care for her baby, and the auspicious start of family life under such circumstances are obvious.

In conclusion a word should be said about certain disadvantages of this type of program. It does take more time and effort on the part of doctors and nurses. Except for attendance in labor, however, this can be minimized under the class instruction system. A number of obstetricians in private practice have adopted the class system of instruction for their patients. A number of physicians in our local area make arrangements for their patients to attend our classes. In the New York City area

such classes are conducted by the Maternity Center Association, an organization which has taken the leading part in promulgating the principles of Natural Childbirth in this country and whose generous support of our program of study has been indispensable.

Lastly, the importance to our civilization of safe and emotionally satisfactory childbearing needs no emphasis. This opportunity of presentation is welcomed by the authors in the hope of enlisting your great influence in helping all of us who are concerned in answering the challenge of Mrs. Helen Heardman when she asks "How is it that we have allowed women whose function is the reproduction of the race by muscular effort, to embark upon the heavy muscular effort of labour without even a second of real training—and in FEAR?" [6]

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Civil Defense

Three publications received recently have to do with civil defense. *Civil Defense in Your Community*, Committee on National Defense, Chamber of Commerce of the U. S., Washington 6, is prepared for the information of Chambers of Commerce, but is of interest generally. Through a series of questions and answers it attempts to tell some of the general things a community should do now by way of civil defense.

The other two publications are Parts 1 and 2 of *Hearings Before the Congressional Joint Committee on Atomic Energy on March 23 and 30, 1950.* Federal plans are discussed by several federal officials. Suggestions for state civil defense activities are given. Part 2 is particularly valuable, in that it contains an extensive statement by Norvin C. Kiefer, Director of Health Resources Division, National Security Resources Board. Two appendices to Part 2, "Medical Aspects of Atomic Weapons" and, "Damage from Atomic Explosion and Design of Protective Structures," are of interest to public health staffs. Although not stated, copies of the "Hearings" can probably be obtained from your U. S. Senator or Representative or the Joint Committee on Atomic Energy.

A Blueprint for Changing Concepts in Antepartum Care*

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FOR the past three years, the New York City Department of Health, through its Maternity and Newborn Division, has developed a Hospital Consultation Service for hospitals caring for maternity patients and new-born infants. Part of this service consists of surveys and making recommendations for the care of antepartum patients in hospital clinics. These surveys are conducted by a team composed of obstetric, pediatric, and public health nursing consultants. Over the years the experience from these surveys confirms the fact that there is a lag between modern well accepted standards of antepartum care and the actual care which the expectant mother now receives. Great credit is due to the clinic personnel who are providing as good care as they are, under crowded and difficult conditions.

Surprisingly enough, the antepartum clinic is usually found to be in the basement or cellar or other undesirable area of the hospital. The decor is in keeping with the physical location: a cold, drab, undecorated, monotonous, unappealing room or series of rooms, imparting an impersonal atmosphere, greets the expectant mother's eye. Rows of hard benches are universal. The dictum of speed is commonly the keynote of conducting the clinic. An assembly line technique pervades the philosophy of antepartum care whereby patients in large numbers are seen in a brief period of time by a sub-minimum staff. For example, in one hospital, three clinic sessions are held each week. On the morning of these days, a nursing session is held to interview new patients. These patients then return in the afternoon to be seen by the physicians. In a 3 hour session, about 160 patients are to be taken care of. Half this number of patients are seen by a physician, allowing about 2 minutes per patient. The remainder are not seen by a physician at all, nor is there any assurance that the patient will be seen by a doctor at her next visit. It is obvious therefore, that all patients needing medical care will not receive it.

From the point of view of appraisal of professional activities, we have seen a number of problems due to lack of coördination and administration of clinic procedure. Specifically, these are: the remoteness of laboratory facilities from the clinic may result in a delay in reporting the findings of the urinalysis to the clinic. Thus, the physician may not be aware of any danger signs which may be indicated by the urinalysis and which may make an important difference in the therapy. Consultation referrals to other specialty clinics within the hospital, although completed, are ofttimes wasted because the reports are not available to the phvsician in the antepartum

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clinic. Other essential data, such as Rh determination, blood typing, serology and chest x-rays, may be lost in the routing from one clinic to another. Finally, all antepartum care may be for naught, for all too often when the patient enters the hospital in labor, the antepartum clinic record is not available to the delivery room personnel, defeating the principle of continuity of care.

The rapid tempo of the patient's course through the clinic generates such momentum that between her entrance and exit there is insufficient time for doctor or nurse to instruct her in the concept of the normality of her pregnancy. Counselling of the patient is in many instances reduced to a bare minimum or is totally nonexistent. It is the exception rather than the rule to find that either physician or nurse has the time to explain to the patient what she may expect to occur during various phases of her antepartum course, labor, and delivery. The opportunities presented during her antepartum visits for the physician or nurse to allay her fears and answer disturbing questions or impart reassurance, are often not taken. Although scientific evidence of the importance of antepartum nutrition counselling is thoroughly proved, in the overcrowded clinic, patients may not receive the necessary advice regarding diet during pregnancy. Not only are the opportunities for individual patient instruction lost, but group instruction also is lacking in most clinics; in addition the clinic has made very little use of the classes for expectant mothers which are offered in the community by other agencies. Where group instruction is attempted, it is often poorly planned and given.

The present status of counselling in some clinics consists of a short lecture by members of the house staff to the expectant mothers. The basic principles of the mental hygiene of pregnancy tend to be disregarded since the house staff neglects to instill a feeling of security in the patients. In fact, they may in some instances arouse untoward fears by stressing the complications rather than the normal physiologic aspects of pregnancy.

It is all too prevalent to find that the antepartum clinic is operating as an isolated unit rather than as an integrated part of a coöperative community plan for total patient care. It is well known that many domestic, financial, and environmental factors affect the patient's condition during pregnancy; yet without liaison between clinic and home there is no knowledge of these factors on the part of the clinic personnel. While such liaison is available through the public health nurse, it is all too seldom used.

The aforementioned observations lead us to attempt to transcribe a "blueprint" for changing concepts of antepartum care.

PHYSICAL SETUP

The blueprint would call for a well chosen location elevated for a change above the subterranean regions of the hospital confines, whose walls are attractively painted and adorned with colorful yet pertinent information in the form of posters which are eye and mind appealing; a comfortable selection of chairs, individually distributed about the waiting room space, as well as a selection of suitable teaching literature which the patient could profitably peruse while awaiting her appointment period; a nearby safe and available niche where she may deposit her out-of-door garments; a well enclosed individual dressing room where the patient's privacy is insured in the course of her disrobing in preparation for her examination by the physician, together with at least a mirror and adequate lighting so that at the conclusion of her examination she may do the usual primping and "put on her face" preparatory to going home again; an individual examining room,

sound-proofed if possible, so that there would be no deterrent to the patient's laying open to her physician her most intimate questions or fears, and which would be completely equipped with all the accoutrements for completing the examination without trafficking back and forth by doctor or nurse; a conference room suitably located and set up to engender the establishment of confidence and rapport between doctor or nurse and patient; a conveniently located and scrupulously clean toilet facility; a centrally located classroom where group instruction may be properly given, utilizing the simple but necessary teaching equipment which is a part of this teaching area. Finally, the clinic should have within its confines a small but well equipped functional laboratory which is prepared and staffed to carry out the routine laboratory work in the conduct of patient care.

ATTITUDES OF STAFF MEMBERS

Of even greater importance than the physical environment is the soical environment, which may only be maintained by the friendly, understanding, helpful and courteous attitudes of the medical, nursing, and auxiliary staffs. The receptionist would therefore be a warm, hospitable person who would radiate confidence and an aura of helpfulness. This would be the first step in allaying fears and anxieties which might have been preëxistent in the patient's mind about the interest of clinic personnel in her as an individual. This confidence inspiring attitude must not end at the reception desk but must accompany the patient throughout the clinic as she contacts nurse, doctor, technicians, and others. Such a clinic atmosphere is representative of the Art of Maternal Care.

MEDICAL CARE

It is important that a qualified obstetrician serve as chief or medical director of the antepartum clinic; that he draw up the technical medical policies and procedures for the conduct of the clinic; and that he actively supervise the clinic so that these policies and procedures will be carried out. The number of clinic sessions and the number of physicians assigned to the antepartum clinic will depend on the volume of patients requiring care. Our experience has shown that in order to provide adequate antepartum care, no more than twelve patients be seen by a clinic obstetrician per clinic session of 2 hours. There should be an adequate number of attending obstetricians so as to insure adequate supervision of the activities and instruction of members of the house staff. The attending obstetricians should also be members of the inpatient obstetric staff so that there will be continuity of patient care ante, intra, and postpartum.

There should be liaison between the obstetric staff and the staffs of radiology, internal medicine, laboratory, chest and venereal disease services, so that adequate and timely consultation and treatment might be instituted on the patient's behalf when indicated. Similarly, special consultation clinics (dystocia, toxemia, and cardiac) should be an integral part of the antepartum clinic setup. It would be expected that accepted standards of prenatal care would be followed, so that the patients would receive adequate antepartum care at each visit. Such standards include not only the conventional medical and laboratory data, but also the routine performance of blood typing, Rh determination, chest x-rays, and dental care.

NURSING CARE

Nursing time should be devoted to the care and instruction of the patient. Non-nursing functions should be delegated to non-professional personnel working under the supervision of the graduate professional nurse. The graduate professional nursing functions are: interval

history taking and interpretation of the physicians' medical recommendations; individual and group counselling of the patient regarding the physiologic principles of antepartum hygiene and nutrition; assaying the patient's emotional attunement to the pregnancy as it relates to her social, economic, and familial environment; screening patient's records for initiation of referrals to intra-hospital departments and extra-hospital community agencies.

Just as we have recommended that the clinic obstetrician be a member of the inpatient obstetric staff, so it is recommended that the nursing supervisor of the inpatient maternity service be responsible for the nursing supervision of the antepartum clinic, in order to provide the same continuity of nursing care. Just as it is important that a qualified obstetrician be in charge of the antepartum clinic, so, too, the nurse-in-charge of the clinic's nursing activities should be well trained in maternity nursing. Finally, in order to correlate, on the patient's behalf, the intra-hospital and extra-hospital community functions, it is recommended that at least one well trained public health nurse be an integral part of the clinic's nursing staff.

ADMINISTRATIVE ORGANIZATION

A well qualified staff and a good physical plant are not the only essentials of a good antepartum clinic. Without good central organization and administration, the goal of good patient care may well be defeated. Such a clinic for the majority of the patients would operate under an appointment system, not a system geared to the philosophy of "hours of waiting for minutes of care." By the use of the staggered appointment system, the multiple needs of the patient in her family and domestic functions will be taken into consideration. No longer will she have to have her neighbor take Johnny to school at 9 in the morning so that she can keep her 8:30 A.M. clinic appointment. In addition, this date and time appointment system will eliminate the hordes of waiting patients overcrowding the waiting room facilities. Furthermore, such a system will allow the clinic staff to care for the occasional "new patient" who inadvertently comes to the hospital clinic without prior registration. Finally, in conjunction with this appointment system, a follow-up plan for those patients who do not keep their clinic appointment at the appointed date and time, needs to be established. Not only does a "broken appointment" interrupt the continuity of antepartum care, but it is likely that patients may have a serious physical, emotional, or social reason for not keeping the appointment.

Since, as we have previously pointed out, the recording of essential data on the patient's record may be at times incomplete, uncoördinated, and thus oft-times not available at the proper time to the personnel concerned, the only solution is the institution of a unit system of records. This means that the patient's complete clinic and inpatient experiences in the hospital, both past and present, should be coördinated into a single record unit which accompanies the patient to each and every department of the hospital which the patient has occasion to visit. In addition, when she is finally admitted to the hospital in labor, this same unit record should be easily procured by the labor and delivery personnel.

The antepartum record form itself should be simple and yet contain the essential medical and nursing data necessary to evaluate the condition of the patient. Reports of the public health nurse's visits to the home and social service reports should also form a part of the patient's unit record.

A final administrative recommendation would be the provision of clerical and secretarial assistants adequately trained

and in adequate number, among whose major functions would be: notation of identifying data on the record form, charting of laboratory data, routing of patients within the clinic, checking the keeping of appointments, filing and transfer of records, collection and identification of laboratory specimens, and taking of dictation.

LIAISON WITH COMMUNITY AGENCIES

Antepartum care as developed in this "blueprint" is a coöperative venture. Therefore, the antepartum clinic should not be viewed as an autonomous unit, but rather should be geared to avail itself of aid or assistance from other community agencies. One of the outstanding sources of aid to the expectant mother is the public health nurse. Ideally, every antepartum patient should be visited in the home by a public health nurse to instruct and prepare the patient. If, in this era of nursing shortage, selection has to be made, it is recommended that all antepartum patients with incipient serious medical or obstetric complications be visited in the home. This recommendation implies the setting up of a referral system by the clinic to the public health nurse and the reporting back to the clinic by the agency, so that the clinic physician and nurse will be able to manage the patient's care and direct therapy more judiciously.

INSTRUCTION OF THE PATIENT

An intelligent understanding of the physiology, emotional and social problems of the prospective mother is desirable. Clinic personnel have the following opportunities for the instruction of the pregnant woman.

The foundation of sound instruction begins with the individual counselling which the patient receives in the course of her contact with the doctor, nurse, and other clinic personnel. Each of these workers has a pertinent contribution to make to the patient in assisting her in meeting the problems of pregnancy. The importance of proper nutrition in the prevention of toxemia of pregnancy is so well established that all personnel of the clinic should be prepared to guide the patient.

A desirable supplement to individual counselling is group instruction, namely, parents' classes. We use the term "parents' classes" advisedly, since the father as well as the mother should share the educational experiences and orientation to the pregnancy and its aftercare. In the organization of a group instruction program for expectant parents, emphasis should be placed on shared participation by obstetric, pediatric, nursing, and nutrition professions. It is obvious that this personnel should have not only a special interest but also special skill in group work. If the antepartum clinic is not set up to provide this type of group instruction directly, arrangements should be made for the utilization of other community agencies capable of performing this function. In the latter event, referral of all expectant parents should be made to these agencies.

It is further suggested that pamphlets prepared for the expectant parents by recognized authorities, such as the Children's Bureau, be available to patients for reference and as a valuable instructional medium. To be truly effective, such literature should have interpretation by clinic personnel. It is suggested too that a loan library of authentic, easily readable books on mother and baby care be available to expectant parents.

Since fear of the unknown is one of the major problems met in the hygiene of pregnancy, this leads us to suggest an additional device as a means of alleviating anxiety on the part of the patient. Patients may be introduced to the labor, delivery, and postpartum facilities of the hospital, to acquaint them with the physical surroundings and personnel, and so dispel that fearsome query

in their minds, "What happens to me when labor starts and I have to go to the hospital?"

SUMMARY AND CONCLUSION

This report describes some of the present problems of antepartum care as observed by a hospital consultation service of an official agency. Undoubtedly many of these problems are well recognized by the professional groups who render patient care. Yet in spite of this recognition, there has been no concerted action to effect a better and more humane quality of care. Such action is necessary if the lag between accepted standards and present practice is to disappear. Recommendations are made through which the care of the antepartum clinic patient may be improved.

Two-thirds of the World Underfed

One-half of the people in the world went to bed hungry last night, will go to bed hungry tonight, will go to bed hungry tomorrow night, and every night "for the rest of their lives." This is the dramatic language in which the following paragraph is often stated, "Only one-third of the world's people get enough of the right kind of food, and they consume three-fourths of the world's food supply. One-half of the human race actually goes hungry, and famine and starvation still stalk the earth, as in ancient times. Disease, low efficiency, social tensions, and political and economic crises, in many areas, reflect the scarcity of food." Accordingly, the United National Educational, Scientific, and Cultural Organization (UNESCO) and the Food and Agricultural Organization (FAO) have adopted Food and People as a major topic for group study and discussion. They have prepared for use by local groups participating in this program a basic piece, "Food and People Discussion Guide," making it available without charge. The discussion suggestions are centered around such problems as the barriers to the distribution of the world's food supply according to need, waste of food in surplus producing areas, point four program's relation to food shortages and many others. It is the hope of UNESCO and FAO that public discussion of this problem will be initiated in civic and club groups, professional and trade associations, farm organizations, church and educational groups, and many others.

A "Food and People Work-kit" has also been prepared for limited distribution, primarily to organization leaders. This includes a comprehensive listing of films, film strips, posters, exhibits, and other program aids. Further information for group leaders from the U. S. National Commission for UNESCO, Department of State, Washington 25, D. C.

Implications for Public Health Nursing in Changing Practices in Maternity Care*

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AS a staunch generalist in public health nursing, I have done what all good generalists are supposed to do—sought the help of experts in a given field. A questionnaire containing twelve items was sent to medical directors of maternal and child health in 48 states, requesting evidence that maternity care practices were changing, and suggesting that nursing implications of the changes be supplied by a public health nursing consultant. The response was very good—42 states supplied data, most of which were complete and pertinent. Some of the questionnaire items dealt with factual information while others sought only an impression or opinion. The subjective nature of the latter approach was fully appreciated, but it seemed the best way to learn something of the thinking of experts in the maternity field across the country. Because of the source of the data, this report will be limited to public health nursing in health departments, and will not consider the contribution of the voluntary health agency. Questions will be discussed under the following headings: hospitalization and referrals, midwives, public health nursing services, inservice education, parents' classes, and natural childbirth.

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HOSPITALIZATION AND REFERRALS

Stating it very briefly, an increasing number of maternity patients are being hospitalized but the period of hospitalization is shorter. Questionnaire data covering the 5 year period 1944–1948 supported this conclusion in an overwhelming majority of the 42 states reporting. Data on referral systems proved hard to analyze, but it seemed evident that effective hospital-health department referral plans were the exception rather than the general practice.

The implications of these changes for public health nursing were not overlooked in the questionnaire replies. Nursing consultants were of the opinion that the following factors had contributed to increased hospitalization: the effect of the EMIC program during part of this period, the increase in hospital insurance and education on hospitalization, increase in family income, decrease in number of physicians willing to do home deliveries, and decrease in available domestic help for home confinement.

In discussing the length of hospital stay, 9 replies indicated that the average in their states ranged from 4 to 7 days. The effect of early ambulation seemed to receive as much emphasis as the shortage of hospital beds in the discussion of early discharge. One consultant suggested that maternity patients, their

families and friends needed more interpretation as to the purposes of early ambulation. The fact that a maternity patient discharged less than a week after delivery has some rather urgent nursing needs was brought out sharply in the questionnaire replies and is supported in the following comments. The mother's inability to take full responsibility for her baby or her household during this period makes early public health nursing visits especially important. Demonstration of certain physical aspects of care may add to the comfort and safety of mother and infant but may also contribute immeasurably to emotional security within the family group.

Lack of nursing personnel was cited as the biggest deterrent to setting up workable referral plans. Much attention was given to the need for planning for continuity in maternity nursing care and the opportunities which all nurses can utilize in helping the mother and family meet the maternity experience in a constructive happy fashion.

MIDWIVES

No very significant change was reported in the contribution of midwives or nurse-midwives during the 5 year period. Three states reported an increase in non-nurse midwife deliveries, but 18 reported a decrease. The 4 states reporting an increase in nurse-midwife deliveries were balanced by four reporting a decrease.

PUBLIC HEALTH NURSING SERVICES

The number of deliveries attended by public health nurses in health departments decreased markedly between 1944 and 1948, and antepartal and postpartal nursing visits decreased to a lesser extent.

Judging from the replies received, public health nurses employed in health departments occasionally give emergency assistance at a very few home deliveries, but, with a few exceptions, the "demonstration" programs of a decade ago have been discontinued. Those of us who have been in public health nursing for some time remember the emphasis on home delivery nursing service at the first two Obstetrical Congresses and recall our nursing concern about time involved, size of bundle, and what to do when the doctor did not come! One notable exception, which should be identified, is the emergency program for nursing assistance at home deliveries established in 1949 by the Shelby-Effingham (Illinois) Health Department as a result of the serious hospital fire. This has been cited as an example of how a health department and a health department nursing service met an emergency!

Decreases in antepartal nursing visits were linked to a long list of causes, many of which are of grave significance in planning for better utilization of total public health nursing service. A list of the most significant causes follows:

1. Lack of interpretation to physicians and community of the maternity service as part of a health department program.
2. The percentage of staff nurses with public health nursing preparation has decreased in many states. Antepartal work is difficult for the unprepared nurse.
3. The attitude of some prepared public health nurses who find "special programs" (immunization clinics, tuberculosis surveys, hearing conservation, etc.) more dramatic than visits to antepartal patients.
4. Pressure from other services (school, tuberculosis, cancer etc.) interferes with maternity work. The service which puts on the most pressure secures the most nursing time.
5. The common concept of the legal responsibility of the health department for communicable disease control tends to minimize importance of maternity service.
6. Low maternal and infant mortality rates result in less emphasis on maternity and more emphasis on "new" programs.
7. Nurses find that patients are better informed due to more instruction from physicians and more educational materials available and so need fewer visits.
8. Increased group instruction in some areas was cited as a reason for less home visiting.

INSERVICE EDUCATION

Twenty-five states reported that the state health department had sponsored an educational program in maternity nursing during 1948 or 1949. Several states reported enthusiastically on recent maternity institutes in which hospital and public health nurses had participated. Three states directed their inservice education programs toward preparing nurses for teaching parents' classes. Two of these states mentioned use of the American Red Cross course entitled "Mother and Baby Care and Family Health."

PARENTS' CLASSES

Local health departments were sponsoring and conducting classes for expectant mothers or parents in 41 states according to the questionnaire replies. Twenty-one states thought that the number of such classes had increased during the 1944–1948 period.

A frequent comment, with direct implication for public health nursing, was the great need for more and better prepared nurses to teach such classes. One state suggested that teaching parents' classes be considered a "special" maternity program as this would be a way of competing for the time and interest of nurses engaged in certain other "special" service programs.

NATURAL CHILDBIRTH

In response to the question, "What is your impression of the acceptance of the Grantly Dick Read[1] method of 'natural childbirth' by the physicians of your state?" 17 states were of the opinion that the method seemed to be practised by a few obstetricians, while 23 states said that no information was available. However, many states added comments, a digest of which is given here. Several states reported that there seemed to be an increase both in interest and in practice of "natural childbirth." Another state, anticipating a rapid increase in use of the method, said that the state health department was promoting it on an experimental basis wherever possible. Some feeling was expressed that the increase was largely due to patients' requests although 2 states reported that "natural childbirth" had been presented for discussion at a refresher course for physicians. Three states were of the opinion that the doctor's time was likely to be a factor in widespread acceptance of Dr. Read's contribution.

Nursing consultants reported varying degrees of interest on the part of hospital and public health nurses. Nurses who were interested were eager for more instruction on "natural childbirth" so as to be ready to give support to mothers and physicians. Some consultants have demonstrated the exercises to groups of mothers at physicians' requests and also to nurses. One comment from the South said, "All of our midwife deliveries are natural childbirth but they have never heard of the Grantly Dick Read method!"

Several points stand out from the questionnaire replies, some good, some not so good. On the good side of the ledger I would list the apparent effort that is being made in at least half of the states to carry on an active inservice education program for nurses on the subject of maternity. Bringing together hospital and public health nurses will probably have more far reaching results than making a referral system work—even though that is important.

On the not-so-good side I would list the lack of preparation for maternity teaching of many nurses working in public health and the lack of interest of some of the prepared nurses. Lack of interest on the part of some private physicians belongs there, too.

Somewhere between the two, I would put the attitude which was reflected in many questionnaire replies; namely, about the shortage of nurses. When a

director or consultant writes "the need is there—the people are interested—if we only had more staff," I want to say, "Let's talk in terms of the nurses you *do* have. What are they doing? Which services are taking their time and how might that time be redistributed so as to provide a reasonable bit for maternity?"

Nursing will have to solve for itself the apparent problem of lack of preparation for or enthusiasm about maternity nursing. The two are very closely related, for security resulting from adequate preparation may help kindle enthusiasm, and there is some evidence that maternity nursing consultants are meeting this need. However, even the prepared public health nurse may show limitations in her concept of antepartal teaching. I recall such a nurse who made an antepartal visit to a young mother four months pregnant and with another child nine months old. The mother was deeply resentful of the second pregnancy, was disinterested in her own hygiene, over-exacting and critical of her baby, and "mad at her husband." After the visit the nurse recorded that the mother was not making progress in following dietary instructions even though she knew what to eat and could afford it. The next visit was planned after the next baby's arrival, as by that time it was hoped that the mother might be more receptive to teaching. This patient had been referred by a private physician who might well question whether or not public health nursing was a service to his patients. How are we going to help a nurse like that?

The questionnaire replies indicated that many public health nurses were unprepared to teach mothers' classes. Leading any sort of community group requires some special skills, and successful group work is likely to be an outgrowth of a nurse's work with families. Nurses can be helped to develop their group work skills through active participation in agency staff meetings, inservice education assignments, serving on committees, family care study conferences, etc. Certainly where specific subject matter is involved, as in a mothers' class, the nurse must be secure in that field and this may mean that an intensive "refresher" on maternity care is necessary. Fortunately, there are excellent references and visual aids available—the Maternity Center Association materials and movies on human reproduction.

Sometimes our "pigeon-holing" of public health nursing services produces unexpected results. For instance, some generalized nurses find school health services the most challenging aspect of their work and may tend to minimize other services, perhaps unintentionally. Recently, however, in many parts of the country schools have developed a deep interest in family living courses and the nurse is rightfully considered a valuable resource person by teachers and to some degree by students. Some of these nurses, confronted with helping a teacher find ways of explaining menstruation and reproduction skillfully, admitted that they wished they were better prepared in maternity—and said that they had not realized before how basic such background was in any type of nursing. The nurse who has carried an active maternity case load or taught a mothers' class or two is apt to be much more secure in the above situation because of her familiarity with terminology, her knowledge of how people learn about themselves, and which teaching methods may be most effective.

The question of how to interest private physicians in what the health department can offer to maternity care is apparently a problem in many areas. The physician is likely to want a definite idea as to what the public health nurse will do for his patients and he is quite right. One particularly skillful public health nurse explained it in this way:

"We don't have any one pattern of instruction for prenatal patients—we simply do everything possible to add to each patient's emotional and physical security—and that includes following her doctor's wishes closely." Many physicians who still refer only patients with health or social problems for home visiting by the nurse will refer their "normal" patients to a mothers' class. We might wonder if we have interpreted one method of teaching better than the other.

Two comments from the questionnaire material which primarily concern program planning have definite public health nursing implications. The first is the concept that a health department cannot afford time from its communicable disease control function to strengthen positive health services such as maternity. This seems out of place in 1949. The health department cannot and should not escape its legal responsibility, but if statistics have any meaning, communicable diseases should not require as much public health nursing time today as they did ten or fifteen years ago. There are exceptions, of course, where certain communicable disease programs will need considerable emphasis for some time to come, but these need not affect program planning in general.

Closely related is the question of limiting public health nursing time for maternity service in view of low maternal and infant mortality rates. This would seem to be efficient planning if we accept the saving of lives as our total job. If we subscribe to a broader philosophy and believe that the health department shares responsibility for enriching the lives of its people through promotion of emotional as well as physical health, then maternity service becomes important. At a time when we have an increasing national recognition of the importance of a mental health program, it would be tragic to neglect the service which can contribute such a great deal to family security.

The implications of the trends in maternity care for public health nursing as revealed by the experts from 42 states are many and varied. Their significance for the future may be summarized in the following questions which I hope we may all be able to answer positively before too long.

1. Are we preparing public health nurses in our schools today to give a quality of service that will meet the needs associated with increased hospitalization and early discharge, with teaching mothers' classes, with "natural childbirth," and the demand from adolescents and parents to understand more about the birth process?

2. Can we utilize more graduate nurse help, more semi-professional and volunteer help for some of our "special" programs, surveys, etc., thereby releasing public health nurses for field services which so far no one seems to perform as effectively as the public health nurse?

3. Can we interest public health nurses in being released from some of the more dramatic jobs that may show immediate and tangible results for the monthly report? Can we make the nurse's contribution to maternity care as challenging as finding hearing defects or helping with dental clinics for topical application of sodium fluoride?

4. Can we provide a high enough quality of inservice education for nurses on the job so that they feel more confidence and interest in the maternity service?

5. Can there be more analysis and evaluation of total public health objectives and present programs by total health department personnel to determine priorities and plan for the best utilization of the limited amount of public health nursing service which is available?

We have a big task ahead—those of us whose job is the preparation of public health personnel and those of us who are responsible for field services. I am not sure how many of the above questions we can honestly answer affirmatively in October, 1949, but the opportunity is here and the future is ours!

REFERENCE

1. Read, Grantly Dick. *Childbirth without Fear.* New York: Harper, 1944.

What Happens to Prematures

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THE first chapter in the life of the premature infant is by all odds the most dramatic one. In it, he utilizes the best talents of the medical and nursing professions, and by the mere act of remaining alive, achieves that so desirable result—the lowering of the infant mortality rate.

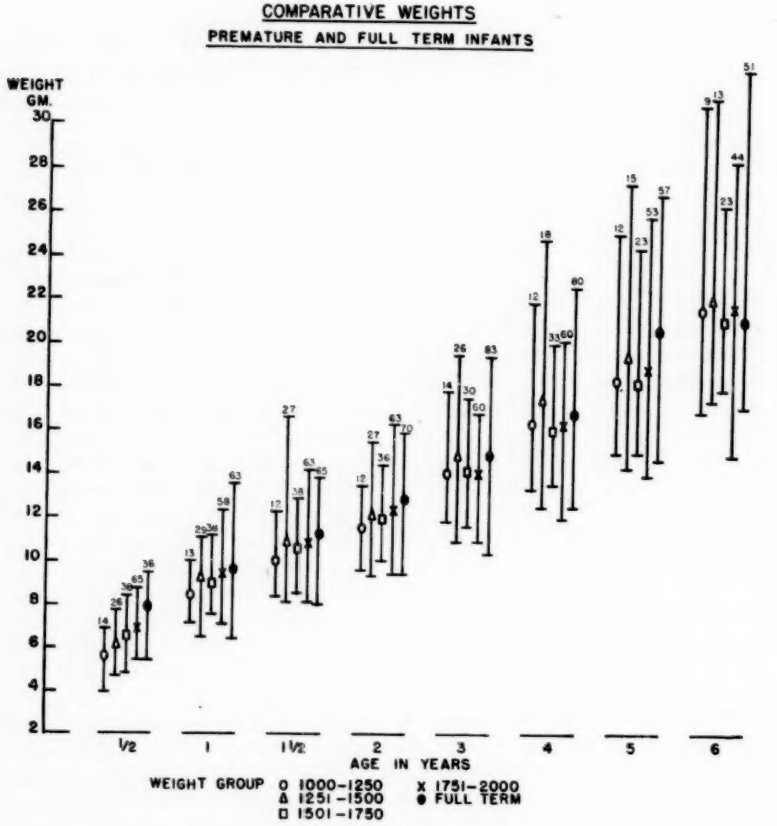
His brief moment of triumph over, he usually disappears into oblivion. The hospital places a "Discharged alive at 2,500 gm." at the end of the chart, or it may add a "Referred to Health Station" and without further thought, sends him home and goes on with its work of keeping more prematures alive.

At the hospital we formerly did just about that—perhaps a little less crudely. We at least gave the mothers a talk on the further care of the baby. But, in the end, we handed her a 24 hour formula, a pink slip for the well baby clinic some ten days hence, and a very small baby. Was it any wonder that the worried family, seeing an infant smaller than most new-borns but already two or three months old, asked itself and us whether he would always be a little lighter, a little shorter, a little slower, perhaps a little duller, a little different in his behavior from his full-term brother?

We did not know the answer then. Were we to believe the literature, the prognosis was a gloomy one. I would like to quote just a few sentences from Capper's article published in the *Am. J. Dis. Child* in 1928. He had reviewed the work of Ylpöe and of Brander, and then added his even more pessimistic statistics from Pirquet's Vienna clinic. "Even more impressive (than the fact that these children have not caught up to full-term children in height or weight by puberty) are the deviations from normal in their psychic and mental progress. In brief, the immature infant will become the backward schoolchild, is the potential future psychopathic or neuropathic patient and even the potential inmate of the home for imbeciles and idiots." There are, to be sure, more optimistic reports, but they are less frequent and less well documented than those of Capper, Ylpöe, Brander, Illingsworth, etc.

Ten years ago we outlined an abortive study by which we hoped to answer this question of the future of the premature. The time is too short to describe our plan except to tell you that out of it, before it was abandoned, came our realization that the parents of premature babies needed more help than they were ordinarily given. And so we did not give up the special premature well baby clinic which we had begun, but continued it as a service clinic for all who felt a need for it. After we had watched these babies through their first year, we became curious about their further course. So we had them come back at 18 months, at 2 years, and then yearly thereafter on their birthdays. We took notes not only on their physical growth, but also on their development in speech, locomotion, self-care, toilet training, school attainments, and social adaptation.

* Presented before the Maternal and Child Health Section of the American Public Health Association at the Seventy-seventh Annual Meeting in New York, N. Y., October 26, 1949.



In retrospect, we wish we had singled out the infants of low birth weight for special attention since they are from the point of view of study in development far more interesting than their larger premature nursery comrades. We have over 500 records of infants in the 2,000–2,500 gm. (4 lb. 6 oz.–5 lb. 8 oz.) group and only about 150 usable records of those of lower birth weight. This is understandable when one recalls that many more larger babies are born and a larger percentage of them remain alive. Although the low-weight group is numerically not as large as one might wish, the infants in it have been followed for periods of 2 to 10 years. If they prove to be normal in their development I take for granted that you will agree if I state categorically that the larger prematures are normal.

It may horrify the statisticians among you to hear that we have subdivided this already small group into still smaller groups according to birth weights. Only in this way, can we tell if there is any critical birth weight below which normal development becomes unlikely or impossible.

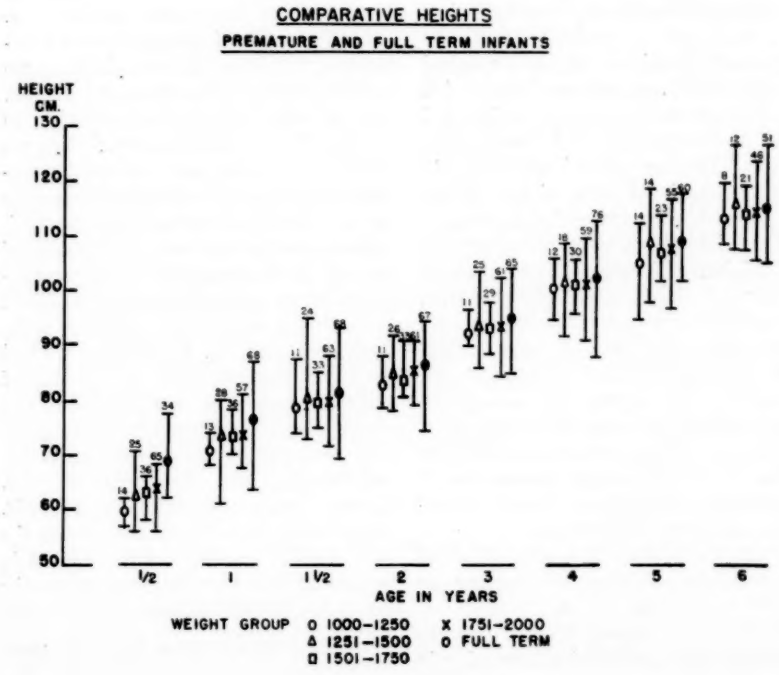
Our first question is whether it is true that the small premature never catches up in height and weight. We have two graphs which show that while it takes some time, even the smallest at

birth have an excellent chance of growing as large as an average child attending the same hospital clinics.

There has been frequent comment that these children walk very late. We find that while there may be some delay, we have a few children in each weight group walking by 1 year and by 18 months, all but a few are walking without assistance. We have made no attempt to get the exact date of the first step alone because very early in our work we discovered that we could not rely on the memories of most of these mothers. Whether consciously or not, they would tell us that their children had their first teeth or had taken their first steps or been toilet trained at a certain age when our records definitely stated that this had not been so. Hence our records only tell us that, for example, of 70 children in the 1,750–2,000 gm. (3 lb. 13 oz.–4 lb. 6 oz.) weight group, 6 children walked at 1 year and that 60 walked at 18 months, leaving 4 who were delayed, but do not tell us the exact age at which the first step was taken. If you accept Gesell's standard of 15–18 months as the time of walking alone you can see that our children are not too slow.

So, too, in speech. By 1 year, over one-half of each weight group said at least one word, and by 18 months there were only 7 who had not begun to talk. Phrases and sentences took longer, but by 2 years by far the largest part could speak two words together. Only 3 waited until they were over 3 to speak in sentences.

Teething, we thought delayed, until we put the figures down and then we found that by 1 year all but 3 children had erupted teeth. Even in the under 1,000 gm. group 3 children had six or more teeth by their first birthday. On



the other hand, very few had any teeth by 6 months.

I won't take the time to discuss the development in self feeding, cup drinking, dressing, toilet training, etc. On the whole the children were not much behind the ordinary child. Almost all previous studies stress the lateness of bladder control. Perhaps there is more enuresis among prematures, but this is difficult to evaluate. Certainly most of them are trained at the usual age. Of the day dribbling of which Shirley speaks we have only one example in 700 cases.

Then, are these children not at all handicapped by their prematurity? I think it is fair to say that the larger number are not. However, there are defects among them, some of which may be definitely blamed on their premature births, others are questionably due to this factor.

In our group we found not one case of retrolental fibroplasia. However, when Dr. Fraad sent a special letter to the parents of all infants who had weighed less than 1,500 gm., asking them to visit the clinic or send a report, he found 5 children who had this unfortunate condition. There are more being found in the group under 2 years of age. These are not within the scope of this study.

There have been other eye anomalies —2 children with cataracts, one a normal 9 year old child successfully operated, the other a microcephalic idiot; one child with glaucoma; 2 with retinal folds leading to visual defects but not blindness. One rather less serious eye defect which has frequently been seen among our children and is mentioned by Ylpöe as common among prematures, is strabismus, often severe enough to require operative intervention.

There have been a few cases of partial or complete deafness, of missing or supernumerary digits, etc.

What of the mental defects? In the literature they are listed as occurring in as many as 10 per cent of premature infants (Rosanoff in the *Am. J. Psychiatry* in 1934). We have been able, from the total group of 700 cases, to find 4 mongols (one dead of multiple anomalies), 4 microcephalics, and 6 idiots and imbeciles, mostly dead or in institutions. This makes 14, or about 2 per cent. There are undoubtedly some we know nothing of.

We have been asked about convulsions, as many parents with epileptic or abnormal children say that they were premature babies. We have had 6 children among the 700 with stories of convulsing. Three of these had fever each time, and there has been no recurrence since they have been older. One child had a brain tumor of which she died. The other 2 may be epileptics but they are such infrequent convulsers that the diagnosis has not yet been made definitely. Of course, many of our children are still young so that the number may increase as more reach the age of 6 or 7.

Finally, what of the problem of intelligence? This bothered us because we were sure that on the whole the children were as bright as they had any right to be considering their heredity. Yet we knew that neither our clinical impression nor the fact that these children were not retarded in the crowded New York schools would be acceptable proof of normal intelligence. We therefore prevailed upon a psychologist to do Binet Simon tests on as many children as he could find time for. In this way we had 28 I.Q.'s ranging from 83 to 124, of children chosen because they were old enough to be discharged from the clinic and were present on a day when the psychologist had time. Later Dr. Knehr, from Payne Whitney, and Mr. Sobol made some group tests using the Otis Alpha Form A.* This resulted in somewhat lower ratings, but when the curve for 99 children was plotted it was

* Results published in a recent issue of the *Journal of Psychology*.

not significantly different from that of groups of New York public school children of similar backgrounds. The lowest I.Q. was 66 in a child of birth weight 2,335 gm., and the highest 137 in a child of birth weight 1,750 gm.

If, then, these prematurely-born children weighing anywhere from 690 gm. (1 lb. 7 oz.) to 2,000 gm. (4½ lb.) are not permanently stunted in size or weight, and learn to walk and talk in a reasonable time, if they do not fill the institutions for the feebleminded, and are of fair scholastic intelligence, then it is certainly correct to say that they are well worth saving as Julius Hess has long maintained. How we will feel when more and more of the smallest ones begin to grow up—and we are saving them in increasing numbers—is a story for another day.

It seems from the present study that premature grow and develop badly or well, just as do the full-term babies. And if that be true every effort in behalf of any premature infant, no matter how small, is entirely justified and indeed obligatory.

"Oscars" for Safety Films

The National Committee on Films for Safety recently awarded "Safety Oscars" to three motion pictures and three slide films—the outstanding 1949 films on safety. In the occupational class, "Safe Clothing" produced by the Canadian Department of Labor; in the traffic and transportation division, "Last Date" sponsored by Lumbermens Mutual Casualty Co., and in the general field "Safe As You Think" of General Motors were the three top motion pictures.

The three slide films receiving awards were "Here's How" and "Rough Riders" entered by the Zurich-American Insurance Companies and "Servant or Destroyer" by the American Petroleum Institute.

Further information about these films and others receiving honorable mention is available from the Committee at the National Safety Council, 20 N. Wacker Drive, Chicago 6.

This Film Committee is made up of representatives of 20 national organizations. H. E. Kleinschmidt, M.D., serves as the representative of the American Public Health Association.

Bacteriologic Studies in Disinfection of Air in Large Rural Central Schools

I. Ultra-violet Irradiation *

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BACTERIOLOGIC examination of air in classrooms of three schools has been made monthly for four years (1945–1949) in connection with an epidemiologic study of the effect of ultra-violet irradiation on the incidence of measles, mumps, and chickenpox in large rural central schools.[1, 2] The schools are the Cato-Meridian Central School, which is completely equipped with ultra-violet lamps, the Port Byron Central School, in which the room housing one section of each of the lower grades is irradiated and the other is not, and the Mexico Academy and Central School, which has no ultra-violet lamps and has been used as a control. All have been built within the past twelve years, have similar ventilating systems, and are located in rural central New York State. Since it was impracticable to test each classroom, the kindergarten, third, and fifth grade rooms were selected for the purpose of this study because they afforded a cross-section of the lower grades, in which there is considerable activity and a generally higher rate of susceptibility to children's diseases.

The rooms selected for sampling were chosen also to achieve as much similarity as possible between the irradiated and unirradiated groups. This, however, had to be done within the fabric of the school program, which meant that attendance and activity levels were not always similar in pairs of samples. With the exception of the kindergarten at Cato-Meridian and the irradiated kindergarten at Port Byron, all the rooms tested in the three schools are approximately the same size, 8,400 cu. ft.; the Cato-Meridian kindergarten is 11,880 cu. ft., and the Port Byron irradiated kindergarten, 11,352 cu. ft. As far as possible, samples were taken during regular periods of study when the room had been occupied for at least 20 minutes. Attendance, temperature, humidity, number of windows open, and activity in the classrooms were recorded at the time of sampling. In spite of the difficulties of sampling during the school day, it was felt that the data would be more significant if collected in the actual environment of the school child and that if they were accumulated steadily over a period of several years, most of the inevitable variables might be overcome.

At the time the sampling was begun in March, 1945, very few specific procedures adapted to these field studies were available. In the first few months of sampling, therefore, preliminary methods had to be established in order to evaluate this and other studies. The

* Presented before the Laboratory Section of the American Public Health Association at the Seventy-seventh Annual Meeting in New York, N. Y., October 28, 1949.

present investigation includes three determinations in each classroom: first, measurement of the number of bacteria-bearing particles per cu. ft. of air; second, measurement of the number of bacteria-bearing particles that settle per sq. ft. per minute; and, third, determination of the presence in the enclosed atmosphere of streptococci of possible respiratory origin. Determination of streptococci and of particles per cu. ft. necessitated the choice of a sampling device either of the impinging or the bubbling type to collect a measured quantity of air. The Wells Air Centrifuge was selected because at that time it was the only apparatus that was easily portable. The methods used throughout this study were recommended as temporary standards by the Subcommittee on Bacteriological Procedures of the Special Committee on Standard Methods for the Examination of Air, of the Committee on Ventilation and Atmospheric Pollution of the American Public Health Association.[3] These methods are presented in detail, with the modifications made during a four year experience.

METHOD

Apparatus

The Wells Air Centrifuge adjusted to deliver one cubic foot of air per minute is used to collect samples in both liquid and solid media. Pyrex centrifuge tubes designed for use with the Wells centrifuge are used to collect samples. Solid media are dispensed in Petri plates 10 cm. in diameter with glass tops.

Media

Formula F_1

Tryptose Agar *
(For use in Petri plates and centrifuge tubes)

	grams
Agar	20
Beef extract	3
Tryptose	5
Glucose	1
Distilled water	1,000

* This agar is similar to that used for the examination of water[4] except that the agar concentration is increased to provide a stiffer medium for use in the centrifuge tubes.

Formula F_2

Air Enrichment Broth (Modified Difco Formula)[5] (For use in centrifuge tubes)

Tryptose	10 gm.
Proteose-peptone No. 3	7 gm.
Yeast extract	3 gm.
Lactose	1 gm.
Disodium phosphate	2.5 gm.
Brom thymol blue	6 p.p.m.
Distilled water to make	1,000 gm.

Formula F_3

Violet Tryptose Agar (Difco product)[5]
(For use in isolating streptococci)

Tryptose	20 gm.
Agar	15 gm.
Sodium chloride	5 gm.
Gentian violet 1% alcoholic solution	0.2 ml.
Distilled water	1,000 gm.
Horse blood defibrinated sterile	50 ml. per 1,000 ml.

Formula F_4

Beef-infusion Broth
(For use in isolating streptococci)[6]

	grams
Beef	450
Peptone (Difco proteose)	20
Sodium chloride	5
Glucose	0.5–1.5
Water	1,000

Sampling

Collect samples in rooms that have been in normal use for not less than ½ hour before sampling. Record temperature, humidity, number of persons and their activity, together with the attendance during the 20 minutes directly preceding the test. Record the number of windows open and the number, position, and apparent operation of any germicidal units, such as ultra-violet lights.

Expose five Petri plates, containing tryptone agar (F_1) simultaneously for 15 minutes. One plate should be placed approximately 3 ft. from each corner and one in the center of the room; all should be supported 30 in. above the floor. During this 15 minute period, take one 5 minute centrifuge sample in 25 ml. of agar medium (F_1) poured from a thermos bottle and cooled to about 55° C. before placing in the centrifuge. During the same 15 minute period, take another 5 minute centrifuge sample in 25 ml. of air enrichment broth (F_2).

Incubation and Counting

Incubate the exposed plates for 18–24 hrs. at 37° C., and count the colonies with a Quebec colony counter, or other suitable device. Report the median count of the five plates as the number of bacteria-bearing particles settling per sq. ft. per minute. The agar tubes should be incubated and counted in the same way. If a centrifuge tube contains more than 300 colonies, a fractional part may be counted, but this fraction must include an entire lengthwise section of the tube. The count divided by 5 is reported as the number of bacteria-bearing particles per cu. ft.

Incubate the exposed broth in the centrifuge tube for 18–24 hrs. at 37° C., and streak a transfer from each tube on violet tryptose agar (F_3). Incubate the blood agar plates for 48 hrs. and examine for *alpha* or *beta* hemolytic colonies. Fish a representative of each such colony to streptococcus broth (F_4) and incubate for 24 hrs. at 37° C. Examine all pure cultures showing the morphologic characteristics of streptococci for serologic relationship to Lancefield Groups A through N.

RESULTS

Results have been analyzed in terms of the apparent percentage reduction of bacteria-bearing particles in pairs of samples taken in irradiated and unirradiated classrooms housing the same grade. The most valid point of comparison appeared to be the partially irradiated Port Byron school where the pairs of irradiated and unirradiated classrooms are in the same building. To eliminate the theoretical possibility of partial interaction of the two atmospheres, the irradiated kindergarten, 2 third grades, and 2 fifth grades at the Cato-Meridian school were paired with the same grades in the unirradiated Mexico school. The median apparent percentage reduction for each year and for each grade was then determined. The results are shown in Table 1.

The reduction varied from 12 to 71 per cent over the four years, suggesting the influence of climatic factors or some other general consideration, because it was substantially the same for any given year in the two sections of Port Byron and in Cato-Meridian and Mexico. The reduction by grade is consistent except for the irradiated and unirradiated fifth grades at Port Byron.

The isolation of streptococci from the samples was undertaken in the hope of finding a strain that could be used as an indicator of contamination, similar to the coliform group in the analysis of water. Such an indicator has not yet been found, although the grouping of streptococci according to the Lancefield technic, while it might not prove feasible as a routine procedure, has provided valuable general information on the flora of this kind of enclosed atmosphere.[7] Approximately 40 per cent of all the streptococci studied, however, showed no reaction in sera of Groups A through N. This might be explained by the fact that most of the strains are green-pro-

TABLE 1

Median Percentage Reduction in Bacteria in Irradiated Rooms by Years

School year	*Bacteria per cu. ft. (centrifuge count) Median percentage reduction*		*Bacteria settling per sq. ft. per min. (plate count) Median percentage reduction*	
	Port Byron irradiated and unirradiated	*Cato-Meridian irradiated and Mexico unirradiated*	*Port Byron irradiated and unirradiated*	*Cato-Meridian irradiated and Mexico unirradiated*
1945–1946	45.5	38.0	42.0	45.0
1946–1947	60.5	71.0	56.0	47.0
1947–1948	21.0	28.5	12.0	39.0
1948–1949	27.0		54.0	
Median Percentage Reduction in Bacteria in Irradiated Rooms by Grades—4 Years				
Kindergarten *	46.0	40.5	55.0	37.0
Grade III *	41.5	50.0	49.0	51.5
Grade V *	12.0	44.0	33.0	46.0

* Cato-Meridian kindergarten 11,880 cu. ft., Port Byron irradiated kindergarten 11,352 cu. ft. Mexico kindergarten 8,450 cu. ft., Port Byron unirradiated kindergarten 8,450 cu. ft. Grades III and V all 8,450 cu. ft.

TABLE 2

Distribution of Streptococci According to the Lancefield Groups

	Number of streptococci isolated	Per cent of total				
		Group A	Group D	Group H	Group K	No reaction in sera Groups A-N
Irradiated classrooms	207	2.4	32.8	7.7	4.8	41.5
Unirradiated classrooms	318	3.7	23.2	11.3	12.8	39.3

ducing and are not readily classified according to serologic group. Of those that do react, with the exception of Group D, the greatest numbers belong to Groups A, H, and K, all of which might be expected to be of respiratory origin (See Table 2). The large numbers of streptococci belonging to Group D encountered in all three schools suggested that, because the school population was drawn from rural areas, these strains might be of animal origin and were introduced on the clothing and shoes of the children. We have, therefore, considered not only all the cases in which streptococci were present but also those from which the non-reacting and Group D streptococci have been eliminated.

Table 3 presents by years the percentage of samples showing the presence of streptococci. "Significant streptococci" were regarded as those showing serologic relationship to Lancefield Groups A through N, with the exception of Group D. The number belonging to other groups of possible non-human origin was so small that it did not influence the results. The percentage of samples showing the presence of streptococci varies considerably from year to year, but in each case the percentage in the irradiated rooms is less than that in the unirradiated, varying from 14 to 44 per cent lower.

During the second year of the study an epidemic of measles occurred in each of the three schools. When the data were analyzed, it was found that an explosive type of outbreak had been experienced in the unirradiated schools, while in the irradiated environment with no reduction in incidence rate, the cases had appeared over a much longer period, suggesting the possibility of a secondary source of infection.[2] This was believed to be the school bus, since from 70 to 100 per cent of the pupils were bus riders. No suitable fixtures for ultraviolet lamps were available for use in the buses at that time, but beginning with the school year, 1948–1949, triethylene glycol vaporizers were installed in the buses at Port Byron. In January, 1948, a fourth school, at Clyde, was selected for the installation of triethylene glycol vaporizers throughout the school and also in the school buses. The routine sampling program was enlarged to include monthly sampling at this school and throughout a complete

TABLE 3

Per cent of Samples Showing Presence of Streptococci in Irradiated and Unirradiated Atmospheres

School year	Port Byron — Irradiated			Port Byron — Unirradiated		
	Number of samples	Streptococci present	Significant streptococci present *	Number of samples	Streptococci present	Significant streptococci present *
		%	%		%	%
1945–1946	27	44.4	7.4	27	51.8	22.2
1946–1947	24	33.3	8.3	24	58.3	33.3
1947–1948	23	60.8	21.7	25	76.0	52.0
1948–1949	21	61.9	38.0	21	76.1	42.8
	Cato-Meridian — Irradiated			Mexico — Unirradiated		
1945–1946	43	37.2	16.2	45	57.7	31.1
1946–1947	38	36.8	13.1	35	65.7	28.5
1947–1948	35	54.2	20.0	40	80.0	35.0

* Those reacting with sera of Groups A through N with the exception of Group D.

school bus trip on one bus each from Clyde, Port Byron, and from the control school at Mexico. The first vaporizers installed did not withstand the rigors of the bus trips, and considerable difficulty has been experienced in obtaining a satisfactory model. In the meantime, however, sampling has been initiated on the untreated buses using the General Electric Company's Electrostatic Sampler. Because of the number of variables, no conclusions can yet be drawn from our limited experience with the glycolized atmosphere.

SUMMARY

Methods used in the bacteriologic examination of air have been developed and are presented. Using these methods, a median reduction of 42 per cent was found in total bacteria per cu. ft., 43 per cent in bacteria settling per sq. ft. per minute, and 31 per cent in streptococci in irradiated classrooms of the kindergarten, third, and fifth grades.

Considerable information has been acquired over a period of 4 years concerning the air in school rooms. Much of this information is difficult to evaluate because of the lack of similar studies available for comparison. It was found, however, that the number of bacteria-bearing particles is generally in direct relation to the amount of activity in the room; thus, single determinations showed tremendous variation within a general trend of decreasing counts from the kindergarten to the upper grades. The data compiled by comparing irradiated and unirradiated rooms within the same school are remarkably similar to those using a school completely equipped with ultra-violet lights and one that has none.

The epidemiologic investigation carried on in the schools at the same time as the bacterial examination of the air has been limited to a study of the incidence of measles, mumps, and chickenpox. Since these are all virus diseases, no correlation can be made between the epidemiologic findings and the bacterial studies. Data concerning the relationship of the reduction in bacterial content in the irradiated rooms to the incidence of nonspecific respiratory illness have not yet been analyzed.

Further study on the effect of disinfection by ultra-violet light is being continued in the Port Byron school. This, and the effect of tri-ethylene glycol vapor in a school and in school buses, will be reported later.

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Factors of Importance in the Use of Triethylene Glycol Vapor for Aerial Disinfection*

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AT the present time acute respiratory diseases account for a very significant proportion of potentially preventable human illness and their effects represent a substantial economic loss to society. The probable relationship of many of these diseases to the air-borne route of contagion has stimulated the development of techniques of aerial disinfection. Since popular interest in such methods has been aroused by reports of the germicidal action of the vapors of various chemical compounds, it is thought timely to summarize briefly the present knowledge concerning one of these agents, namely, triethylene glycol.

The first report of the bactericidal effect of triethylene glycol vapor on air-borne microörganisms was made by Robertson and his associates in 1943.[1] Earlier studies[2-7] had been made utilizing propylene glycol vapor in which rapid killing of air-borne pathogens was demonstrated. However, when an evaluation of related compounds was made, triethylene glycol was found to be most suitable because smaller concentrations were required.

Triethylene glycol is a glycol-ether of the following structure: $HOCH_2CH_2OCH_2CH_2OCH_2CH_2OH$. It has a boiling point of 290° C. and a vapor pressure of 0.001 mm. Hg at 22° C. Pure triethylene glycol is odorless and tasteless and is an extremely hygroscopic substance. Because of its low vapor pressure, vaporization is usually accomplished by heating. Triethylene glycol vapor has no deleterious effect on fabrics, books or surfaces in the environment in which it is present.

In vitro studies[8] have shown that triethylene glycol has a moderate germicidal potency against broth cultures of respiratory pathogens. The bactericidal action does not become apparent until concentrations greater than 20 per cent by volume are used. Thus, the *in vitro* germicidal action of triethylene glycol is of a much lower order of magnitude than that of the commonly used disinfecting agents. An interesting phenomenon was noted, namely, that a minimum quantity of water is necessary for rapid lethal action. This finding may be of significance in terms of the mechanism of action of the glycols.

Under controlled laboratory conditions, triethylene glycol vapor has been found to exert a rapid lethal action against a wide variety of air-borne infectious agents. The bacteria found to be susceptible to glycol vapor include pneumococci, Types I, II, and III; beta-

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hemolytic streptococci, Groups A and C; alpha streptococci; staphylococci; influenza bacilli; *Escherichia coli;* and *Bacillus aerogenes*.[1, 9] The virucidal effects of triethylene glycol vapor have been demonstrated against the viruses of influenza, PR8 strain[1]; meningopneumonitis[10]; and psittacosis.[11] Bigg and Mellody[12] have reported on the fungicidal action of high concentrations of triethylene glycol vapor. Further studies will result in useful information concerning the susceptibility of other air-borne infectious agents.

Experiments designed to evaluate the toxicity of triethylene glycol by inhalation and ingestion in monkeys and rats have been reported.[13] These tests were carried on for more than a year and no evidence of significant toxicity was obtained. Because the amounts necessary for bactericidal action in the air are so minute, the quantity of triethylene glycol retained by inhalation never approaches a toxic level.

The mechanism of aerial disinfection by the glycols was analyzed in detail by Puck,[14] and he demonstrated that it is the vapor phase which is essential for such action to occur. Puck stated that "the effectiveness of any compound as an aerial germicide depends upon the extent of condensation of its vapor on air-suspended bacteria, and on the rate at which the resulting concentration of germicide can produce death of the microörganisms." A low vapor pressure, high hygroscopicity, and toxicity for bacterial metabolism were the properties cited by Puck as being required of a compound if it were to be an efficient aerial disinfectant. It can be seen that triethylene glycol adequately fulfils two of these criteria and, although a weak germicide, is sufficiently toxic to produce effective killing.

Wise, Puck, and Stral[15] have developed a method for determining the triethylene glycol content of the air. The air is bubbled through water, and the aqueous solution of glycol thus obtained is mixed with a solution of potassium dichromate in sulfuric acid. The extent of reduction of the dichromate solution is proportional to the concentration of glycol in the air. While useful, this method is not specific, and requires the sampling of large quantities (ca 300 liters) of air. Recently, a more sensitive test has been developed[16] in which concentrated sulfuric acid is used as the sampling medium. The acid, containing triethylene glycol, is treated with alpha-naphthol; and the depth of the yellow color formed is proportional to the concentration of the glycol. Usually, only 30 liters of air are required for a sample. It is reported that this test has an accuracy of 5 per cent in the range of 1 to 10 micrograms of glycol per liter of air. The characteristics of air containing both glycol and water vapor form the basis of an analytical instrument called a "glycostat" or "glycometer."[17] This instrument is primarily a research tool at present. It is quite complex and expensive and, while it has been in use in our laboratories for a number of years, it is not yet commercially available.

Factors which determine the availability of triethylene glycol vapor for condensation upon air-borne particles will influence the rate at which aerial disinfection can occur. The concentration of glycol vapor in the environment, relative humidity, temperature, and rate of ventilation all affect the attainment of a satisfactory disinfection rate. Because of the importance of these features, each will be discussed in some detail.

CONCENTRATION OF GLYCOL VAPOR

Minute quantities of triethylene glycol vapor (2 to 5 μg. per liter of air) are sufficient to produce maximal rates of bactericidal action. The explanation for this lies in the low vapor pressure of the glycol which leads to saturation of the air with low concentrations. The

more closely the saturation level is approached, the greater will be the extent of condensation of glycol vapor on particles suspended in the air and, consequently, the more rapid the destruction of air-borne microörganisms. Fogging will become apparent if the concentration of glycol is kept near or above the saturation level. Thus, the appearance of a pronounced fog may be taken as evidence of excessive vaporization of glycol. However, in environments where no means of control of the glycol concentration are available, the presence of a slight fog will be the only indication that adequate amounts of vapor are present in the air. Aside from esthetic reasons, there is no harm inherent in such a fog.

RELATIVE HUMIDITY

The concentration of triethylene glycol vapor which saturates the air is determined by the relative humidity. Thus, at 0 per cent relative humidity the air is capable of containing a maximal amount of glycol vapor determined by the vapor pressure of pure triethylene glycol—8.5 μg. per liter at 22° C.[18] However, at 100 per cent humidity no glycol can be present in the vapor state. Furthermore, the relative humidity limits the maximum concentration of glycol which can accumulate within the air-borne particle. The glycol-water content of the particle must always maintain an equilibrium with the vapor concentrations of these substances in the air. This latter phenomenon has practical significance because there are data available[19] to indicate that glycol vapor is much less effective at humidities above 60 per cent.

In summary, it may be stated that the relative humidity plays a dual role in determining the bactericidal action of glycol vapor, in that (1) it controls the saturation concentration according to physico-chemical principles; and (2) at high humidities the particles in equilibrium contain so much water that highly bactericidal concentrations of glycol are unattainable.

The data obtained from experiments utilizing atomized broth cultures of Group C hemolytic streptococci under controlled conditions indicate that maximum rates of bactericidal action of triethylene glycol vapor will be secured at humidities ranging from 20 to 50 per cent and at concentrations above 50 per cent saturation (2–5 μg. per liter).[19] When the particles containing the microorganisms have been subjected to prolonged desiccation, experimental data suggest that somewhat higher humidities are compatible with effective rates of kill, provided adequate concentrations of vapor are maintained.[20]

EFFECT OF TEMPERATURE

The influence of environmental temperature has been studied within the range of 55 to 85° F.[19] These levels were selected because they represent the extremes encountered in human habitations. There was a progressive increase in the rate of bactericidal action as the temperature was increased. At a constant saturation level of glycol vapor there was found to be approximately a twofold increase in the rate of bactericidal action with each 15° F. of thermal rise.

EFFECT OF VENTILATION

Another factor of importance in the attainment of adequate rates of aerial disinfection with glycol vapor is the quantity and quality of ventilation in the treated environment. Obviously, the rate of ventilation as determined by air changes per hour must be considered in the calculation of vapor outputs to be used. Under conditions of constant output of vapor, the loss of vapor due to air exchange is exponential and can represent an obstacle to the maintenance of adequate bactericidal concentrations. For example, assuming a ventilation rate

of 1.5 air changes per hour and a constant rate of production of vapor, at the end of one hour 77 per cent of the vapor produced has been lost by ventilation alone. At 3.0 air changes per hour the loss will be 95 per cent at the end of the first hour. Fortunately, if there were concomitant, constant production of bacterial contamination of the air, there would be an equal dilution of the bacterial population at the ventilation rates cited.

Conditions of ventilation which lead to the existence of stagnant pockets of air and drafts with marked irregularities of mixing can lead to obvious difficulties in maintaining bactericidal concentrations. These faults can be corrected by the proper use of fans and blower systems to insure that the air in all parts of the treated environment will contain a uniform concentration of glycol vapor.

FACTORS OF IMPORTANCE IN THE DESIGN OF VAPORIZING UNITS

The slow rate of evaporation of triethylene glycol gives rise to difficulties in the production of adequate quantities of vapor. Various techniques have been devised to increase the rate of conversion of liquid glycol into vapor, and, at the present time, heat is commonly used for this purpose. However, there are certain precautions which must be observed in the use of heat for glycol vaporization. Although the boiling point of pure triethylene glycol is approximately 550° F., decomposition of the material becomes significant at temperatures well below this value as indicated by the development of an acrid odor or discoloration of the liquid glycol. Initially it was felt that 260° F. should represent the maximum temperature used for glycol vaporization.[21] However, under experimental conditions, we have observed no apparent decomposition of triethylene glycol when temperatures up to 290° F. were maintained at the site of vaporization, provided the vaporizing unit was designed so that heat was applied to the liquid glycol only at the point of vapor formation. On the other hand, decomposition was frequently observed when the vaporizing temperature was raised above 290° F. or when liquid glycol was kept above 120° F. for long periods of time.

The precise nature of the decomposition products is as yet unknown but they may well be irritant or toxic and their formation should be avoided. For this reason it is felt that a limit of 290° F. should be applied to the temperature employed in vaporization and, furthermore, that liquid glycol should not be heated above 120° F. for long periods of time.

Continuous vaporization is required to maintain adequate concentrations of glycol vapor in the treated environment. The loss of vapor due to condensation on surfaces and air-borne particles and dilution, as a result of ventilation, are so great that intermittent methods of vaporization are inefficient and unreliable. The continuous operation of the vaporizer requires the addition of a suitable glycol reservoir to the unit, otherwise frequent refilling becomes necessary. To prevent decomposition of glycol in the reservoir, its temperature should be kept below 120° F. If this limit is observed, the glycol in the reservoir will show little change over long periods of time.

Because of the low vapor pressure of triethylene glycol there is a marked tendency for the vapor to condense upon cool surfaces and particulate matter in the air. This leads to an appreciable loss of vapor from the air and requires the vaporization of quantities several times greater than those theoretically calculated to produce a desired concentration in a given volume of air. In environments with large areas of cool surfaces, such as windows, the loss of glycol from the air will be correspondingly greater.

In an effort to demonstrate the extent of this loss a series of experiments was performed in a chamber of 640 cu. ft. volume.[22] * Triethylene glycol was vaporized at uniform rates from a constant delivery syringe under varying conditions of ventilation. The temperature employed for vaporization was 285° F. The air was analyzed for glycol content at frequent intervals and the results obtained were compared with the concentrations theoretically calculated to be present under the existing conditions of ventilation. The theoretical concentrations were calculated on the assumption that complete mixing of vapor and air occurred and that the only losses were those due to air exchange.

Rates of vaporization ranging from 0.14 to 1.1 gm. of glycol per hour and ventilation rates ranging from 0 to 2 air changes per hour were studied. In all instances the analytical concentration of glycol vapor was less than 30 per cent of the theoretical value. The results of a typical experiment are shown in Figure 1 in which glycol was vaporized at the rate of 0.58 gm. per hour in the 640 cu. ft. chamber with a ventilation rate of 2.0 air changes per hour and a humidity of 20 per cent. It will be noted that this rate of output was barely sufficient to maintain bactericidal concentrations of glycol vapor in the air under the conditions of the experiment.

It is essential that the rate of glycol vaporization should be sufficient to maintain bactericidal concentrations in the treated environment at all times. The output required for this purpose will vary in different environments, as well as under varying conditions of temperature and humidity. For these reasons a given vaporizer should be capable of various outputs as measured by the grams of liquid glycol vaporized per hour. For small vaporizing units, the output should vary from a minimum of 0.5 gm. to at least 2.0 gm. per hour of liquid glycol vaporized per 1,000 cu. ft. of volume to be treated. These high rates of output are desirable for the purpose of securing bactericidal concentrations in less than one hour after the unit is put into operation and also to compensate for the rapid loss of glycol vapor from the air. Furthermore, a single small vaporizer should not be used for more than one room or for a volume greater than 4,000 cu. ft.

It becomes apparent that the design of a vaporizing unit is of considerable importance in the production of adequate quantities of glycol vapor. The temperatures employed for vaporization, as well as those attained by the liquid glycol in the reservoir, should be carefully controlled. Furthermore, care should be taken to eliminate all fire hazards in the electrical circuits and the unit should be capable of continuous operation over long periods of time. The ultimate requirement, however, is that a given vaporizing unit should maintain bactericidal concentrations of glycol vapor in the air of the space for which it is designed.

When glycol vaporization is to be applied to large areas, such as entire wards or laboratories, the most practical solution is to incorporate a large vaporizing unit or units into the air conditioning system. Care should be taken to provide adequate mixing of the treated air and direct measurements of the glycol content of the air should be made periodically to insure the maintenance of bactericidal concentrations.

Under conditions where chemical analyses are impractical, the presence of a slight fog is essential. The presence of such a fog is not harmful and usually will not be detected unless the observer uses a collimated beam from a brilliant light source. A slight fog would represent the only certain evidence for the presence of bactericidal concentrations of glycol

* The detailed presentation of the data obtained in these experiments will be the subject of a report to be made at a later date.

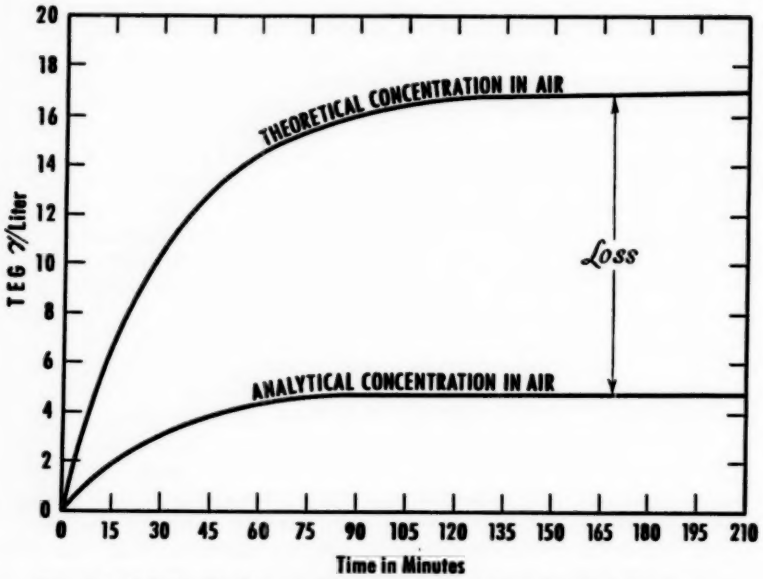

FIGURE 1—Relationship between theoretical (calculated) and analytical concentrations of triethylene glycol obtained in the experimental chamber. Conditions of the experiment were as follows: volume = 640 cu. ft.; two air changes per hour; relative humidity = 20 per cent; rate of glycol vaporization = 0.58 gm. per hour.
Saturation of the air under these conditions equals 5.1 μg./liter.

vapor. The absence of a fog under such circumstances would suggest the possibility of inadequate vapor concentrations and be an indication for increasing the vaporization of triethylene glycol.

ADJUNCTIVE MEASURES

Field studies[23–30] have indicated that complete sterility of the air is not attainable with the use of glycol vapor. However, in every instance in which comparisons were made, it was observed that the aerial contamination was less in the glycol treated than in the control areas. It is believed that the majority of the air-borne organisms which appear to resist the bactericidal action of glycol vapor are dispersed as dried particles from dust reservoirs. This observation leads to the conclusion that oiling of the bedclothes and floor should be used as an adjunct to glycol vaporization. When this is properly done, as was shown by Puck and associates,[24] the aerial contamination approaches a minimum.

The epidemiologic studies on the efficacy of triethylene glycol vapor in the prevention of respiratory disease indicate that the greatest protection occurred in environments with the least opportunity for contact infection.[23–26] The studies which were made in environments in which there was greater opportunity for contact to occur show much less striking protection against infection on the part of glycol vapor.[27–30] This result is to be anticipated and suggests the continued necessity for adequate standards of personal hygiene in the presence of bactericidal concentrations of glycol vapor.

The use of triethylene glycol vapor for aerial disinfection presents few problems from a technical point of view. When the physical requirements for the main-

tenance of bactericidal concentrations of the vapor are fulfilled, and the proper adjunctive measures applied, significant diminution in the air-borne bacterial contamination of the treated environment can be anticipated. This observation is of significance in situations where the opportunities for air-borne transmission of infection are great, such as in hospitals; particularly in communicable disease wards, nurseries, pediatric units, operating rooms and crowded dispensaries. Other environments, for example, schools, offices, and crowded dwellings, offer interesting possibilities but, until more controlled observations are available, little can be predicted as to the benefit which can be derived from the use of glycol vapor in such locations. In many environments infections are spread by routes other than the inhalation of air-borne microörganisms. Under these circumstances, the benefits to be derived from the use of glycol vapors may well prove to be negligible.

SUMMARY

1. The significance of such factors as relative humidity, temperature, and ventilation in the use of triethylene glycol vapor for aerial disinfection is discussed and the necessity for maintenance of germicidal concentrations in the air of the treated environment is emphasized.
2. Certain features of design applicable to suitable vaporizing units are described and the avoidance of conditions leading to decomposition of liquid triethylene glycol is stressed.
3. The use of oiling of floors and bedclothes and the maintenance of high standards of personal hygiene are indicated as desirable adjuncts to the use of triethylene glycol vapor for aerial disinfection.

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Beirut University to Expand

The American University in Beirut, Lebanon, is the largest American educational institution outside the United States. Plans have recently been made for establishing an engineering school, a school of public health, and an agricultural school. Funds have been pledged for the engineering school, which it is expected will eventually graduate 50 engineers annually. Three new courses in agricultural and irrigation engineering, electrical engineering, and petroleum engineering will train men to participate in the development of the area's natural resources.

On the basis of a report by Henry E. Meleney, who spent a semester at the university in 1949 surveying public health educational problems in the Middle East, the Rockefeller Foundation has made a grant of $50,000 as a nucleus for a school of public health administration. For the present a laboratory will be established, courses in public health given, and expenses for survey trips in the area will be made available. At the present time each medical school student must take at least one course in public health problems.

The aim of the university's new program is to develop the resources of the Middle East and combat the poverty and disease that make it one of the world danger spots. President of American University is Stephen B. L. Penrose, Ph.D.

Pattern of Organized Medical Care Programs in a Rural County*

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THE hesitation of many health officers to become involved in programs of organized medical care is due to many factors, historical, sociological, economic, and administrative. Among the reasons offered is the claim that "medical care is a controversial matter and there is not enough experience available." Yet, over several decades a great variety of organized activities relating to medical care has been developing in American communities. Some have been undertaken as part of the preventive program of the health department itself, but most have been undertaken by other agencies, official and voluntary, as a phase of some general program.

Numerous studies have been made of organized medical care programs of different types in the nation as a whole.[1-7] The place of impact of any organized medical care program on the individual, however, is in the local community, whether funds and authority are derived from the federal, state, or local level. It may be of some value, therefore, to focus our attention on a single county and take stock of the variety of organized medical care programs already in operation.

It is difficult to distinguish those organized health activities which are preventive from those which can be considered medical care. The distinctions sometimes drawn have been based less on rational science than on social attitudes. Yet, for the sake of administrative convenience, delineations must often be made and for this purpose we may describe a preventive service as one which deals with the presumably normal individual, while a medical care service relates to the individual in whom some illness or some symptom or sign of illness has already developed. In today's panel,* we will attempt to describe what might be found in a typical rural county with respect to organized medical care. This one-sided focus should not obviate the basic fact that both prevention and treatment are directed toward the same individuals, if at different times, so that their administration should be integrated.

AGENCIES CONCERNED WITH MEDICAL CARE

To obtain a truly complete picture of organized medical care programs in a county, it is necessary to go far beyond the usual conception of a "health agency." Defining an "organized medical care program" as any activity designed primarily to make available medical or related services or to improve their quality, brought about through group action, it is found that scores of

* Presented at a Joint Session of the Health Officers and Medical Care Sections of the American Public Health Association at the Seventy-seventh Annual Meeting in New York, N. Y., October 27, 1949.

* See Williams, Huntington. Baltimore's Medical Program. *A.J.P.H.* May, 1950; Dixon, James P. Integration of Public Health and Hospital Services in Denver. To be published in *A.J.P.H.*

agencies are involved. These agencies are both official and voluntary, and some are engaged in business for profit. They may be local, state, or federal in control. Many, of course, provide preventive services along with medical care. So considered, some seven classes of agencies are found to have an impact on the people of a county.

First, there are the official health agencies which include not only the public health agences (local, state, and federal), but also the medical institutions for chronic physical and mental impairments operated usually by state government and the various state licensure authorities for the healing arts.

Second, there are other official agencies with medical care responsbilities such as boards of education, departments of public welfare, workmen's compensation commissions, insurance departments, agricultural agencies, the military services, the Veterans Administration, and law enforcement agencies.

Third, there are the voluntary health agencies devoted to attacks on particular diseases, such as tuberculosis, cancer, heart disease, crippling, mental disorder, alcoholism, and others. Highly important also are voluntary community agencies promoting prepayment medical care plans.

Fourth, there are various professional bodies of physicians, dentists, nurses, druggists, hospitals, and other groups concerned with factors having important bearing on the quality of medical care and public relations.

Fifth, there are numerous voluntary social agencies providing medical services, among other things, such as the American Red Cross, the Salvation Army, family and other social case work agencies, some church organizations, and youth groups. Of increasing importance are various forms of community coördinating councils in the field of health or general welfare.

Sixth, there are the different industrial enterprises found even in the typical rural county, whose employees may obtain medical service on a group insurance or some other organized basis; and there are businesses concerned specifically with financial aspects of medical care like commercial insurance firms or loan companies.

Finally, there are a great many civic and social groups in the typical county sponsoring some medical care activity either for their members or for others, such as fraternal lodges like the Moose or Masons, service clubs like the Lions or Kiwanis, veterans' organizations, women's groups, farm organizations, parent-teacher associations, and others.

Analysis of the specific agencies of these several types having a bearing on medical care in the average county can yield some astonishing findings. In one county so studied, 83 separate agencies were found to be involved, and this did not include 54 other agencies whose activities were solely preventive in character. To gain insight into the extent to which total medical care needs are being met by this maze of group organization, it is necessary to analyze the field according to the type of service rendered.

The provision of comprehensive medical care for an entire population—even in one county—is an enormously complex function. Despite the great variety of agencies concerned, the predominant pattern for provision of medical care in the United States is dependent on private, individualistic relationships. Those segments of the whole which, for different historical reasons, have been subjected to social organization are found to be based essentially on three limiting factors: (a) type of person served; (b) class of medical service provided; and (c) type of illness to be treated. Organized medical care programs may cut across the lines of these categories, but if they are used as a rough guide to analysis, what do we find in the typical county?

ORGANIZED PROGRAMS FOR CERTAIN TYPES OF PERSONS

For certain types of persons a variety of programs of medical care is usually found. Best known perhaps are the indigent or public assistance recipients who receive tax supported medical care through the county and state departments of public welfare, and indirectly through the federal Social Security Administration. Care may be provided through salaried physicians, usually part-time, or through any participating practitioner paid on a fee-for-service basis. Lack of funds commonly compels restriction of services to "emergency" conditions. Seldom is more than 5 per cent of a county population covered under this program, commonly 1 or 2 per cent.

The overall problem of care for the medically indigent is generally larger than that for the fully indigent. Yet the aggregate of organized programs for this indeterminate group is small in most rural counties. Rarely a hospital outpatient department may provide services without charges to patients and without remuneration to the attending physician. More often a number of voluntary social organizations, like a family case work agency or the Salvation Army, will provide financial assistance to pay for privately rendered services in selected cases. The aggregate expenditure is usually far lower than that for public assistance recipients; eligibility determinations and authorizations are often made rather informally.

The most rapidly expanding group assisted by special organized systems of medical care in most counties are the employees of certain industrial enterprises. In counties with heavy mining, lumbering, or railroad operations, prepayment plans for medical and related services have operated for many decades. Even within a single county, dozens of autonomous programs of this type may be found, because typically each independent company has its own plan, with differing scope of services, costs, pattern of administration, and other details. In many manufacturing enterprises there are group insurance plans, typically for catastrophic medical expenses, carried by commercial insurance companies. Labor unions have taken an increasing interest in developing such programs for their members and in the hundreds of counties in 26 states with coal mining operations, the medical and hospital services financed by the new United Mine Workers of America Welfare and Retirement Fund are having major influence. Finally there is the disability insurance program for railroad workers, provided under the 1946 amendments to the national Railroad Retirement Act.

A fourth class of person for whom organized medical services are available are the members of lodges and fraternal orders. Many of these will be found in the average county, providing their members with weekly cash benefits during sickness. In addition, on the national level, most of the lodges provide special hospitals or nursing homes for invalid members.

Age level is another criterion for organized medical care and a number of special programs are provided for children. The local health department often provides certain diagnostic, if not treatment, services for school children, or such services may be admnistered by a board of education. Service clubs, like the Kiwanis or Rotary, may finance special treatments for selected children from low income families. Girl Scout troops all over the nation are covered by group insurance policies which pay for the first medical care received for an injury incurred during scout activity. Medical care for children has broad public appeal, and many different voluntary groups may contribute toward it. The aggregate volume of services so provided, however, may not be great in relation to the total need.

A sixth class of individual provided medical care is members of the armed forces. Military personnel stationed in hundreds of counties are entitled to care for any illness either at Army or Navy facilities or, if these are not easily accessible, through local private resources at military expense. In addition, of course, young men from local families receive their medical care at military posts throughout the world.

War veterans constitute another important class of person for whom special services are available. Constituting 10 to 15 per cent of the average county's total population, they may be entitled to care for any condition, even if not service-connected, if hospitalization is required. For such non-service-connected conditions, care is provided at a Veterans Administration hospital, if a bed is available and if the veteran states he is unable to finance care personally. The government provides no medical assistance for the dependents of veterans, but local chapters of the American Red Cross often do so, as do certain posts or auxiliaries of the major veterans' organizations.

If a college or university is in the county, the students and sometimes the faculty may get medical care on an organized basis, financed by group prepayment (quasi-compulsory) and rendered usually by full-time salaried physicians. A ninth group are prisoners in local jails who ordinarily are provided urgently needed medical services at the expense of law enforcement agencies.

This does not exhaust the list of special classes of persons receiving organized care in a hypothetical county, but it may illustrate the fact that their number is not insignificant and that administrative arrangements for them are highly variable and complex.

ORGANIZED PROGRAMS FOR CERTAIN CLASSES OF MEDICAL SERVICE

The limiting factor in certain other organized medical activities is not the person served but the type of service provided. Thus a number of organized activities relate to the provision of hospital care. General hospitals themselves are products of much social organization, especially when under governmental or nonprofit association control. Hospital medical staff organization influences the quality of hospital care importantly, as do standards of hospital administration promulgated by national voluntary bodies like the American Medical Association and the American College of Surgeons. Equipment and maintenance of hospitals are often fostered by special Hospital Auxiliaries. Inspection and licensure of hospitals in most states are now carried out by the state department of health. All these functions, while not relating directly to the financing of hospital care, involve aspects of medical care administration that would be encompassed in any comprehensive program. In additon, a significant fraction of the population in most counties today is enrolled in some type of prepayment plan for hospital care either through a state-wide Blue Cross association or a purely local undertaking.

Space does not permit a comparable review of other programs of this type. They consist essentially of activities relating to the services of physcians in the office, home, or hospital, dental services, nursing services, care in nursing homes, auxiliary functions (laboratory tests, drugs, etc.), and financial aid for various medical services (commercial insurance and loan companies).

ORGANIZED PROGRAMS FOR CERTAIN ILLNESSES OR INJURIES

More conspicuous among organized medical care programs are those in which services are provided for diagnosis and treatment of specific ailments. Probably the most fully organized sector of the entire field of medical care relates to tuberculosis. Today the vast majority

of active cases, for whom any institutionalization is obtained, are cared for at governmental sanatoria, usually state operated. Whether partial payment is required or care is entirely tax supported, the total cost of medical care for local tuberculosis cases usually far exceeds expenditures in the county for the public health control of the disease. The diagnostic services at tuberculosis clinics operated by the local health department or tuberculosis association, as well as organized pneumothorax services, are further components in the organized medical care of this disease.

Here again unfortunately space does not permit an adequate review of the special programs. Mention may simply be made of their scope: mental disorder, venereal disease, crippling or static defects (including vocational rehabilitation of adults), cancer, defects of eyesight and hearing, heart disease, and other conditions. In addition certain programs provide organized medical care not by reason of a specific diagnosis, but rather by reason of the condition's mode of origin. These include programs for occupational disabilities under workmen's compensation laws, for disabilities incurred during military service through the Veterans Administration, and for conditions resulting from public disaster through the American Red Cross. Considering services available from agencies of all levels, it will be found that all or nearly all these categories of service are available in some form to the residents of the average county.

CONCLUSION

This review of the provision of organized medical care from the vantage point of a rural county may have established the fact that a great variety of programs has long been operating throughout the nation. In one rural county so studied some 25 categories of programs could actually be defined. Whether these functions are administered on the simplest, informal basis or are under careful administrative controls, there are implicit in most of them all the essential elements of medical care administration, different only in degree, that would be involved in a nation-wide program of general medical care.

A cost analysis of these organized medical care functions affecting the people of one county is difficult to make, but there is no doubt that the order of magnitude far exceeds the usual expenditure for all preventive services. Despite this, it can hardly be claimed that medical care needs are being adequately met. Rather than reflecting adequacy of coverage, the volume and variety of organized services reflect the tremendous scope of the medical care field.

We can think of total medical care needs as represented by a large cube. One dimension is the population, the second is the whole spectrum of illnesses which people may suffer, and the third is the scope of different classes of medical and allied services available to diagnose and treat these afflictions.

In a truly comprehensive and nationwide program of organized medical care, this cube would be filled solid. In other words, all the people would be assured all classes of service for all ailments. In any community today, however, we find variously shaped islands within this cube filled in. For certain segments of the population, like members of the armed forces, all classes of service are available for all conditions. For certain ailments, like tuberculosis, the entire population is served with respect to one class of service: hospitalization. For certain classes of service, like dental care, certain segments of the population (limited usually by age level and income) are provided service for certain conditions of the teeth. Every community has its own special configuration and doubtless no two are alike.

Yet the dimensions of the medical

care cube are so great, that in any community typically only a minority fraction of the cubic volume is filled by organized programs. A national medical care program would, in one sense, serve to fill in the blank spaces, although the organizational task would, of course, not be quite so simple. There is no axis in the cube, however, which some island of organized service does not cross, presenting useful experience. The job of acquiring the know-how to administer large-scale medical care programs, therefore, need not be so formidable.

What of the relationships of the health department to all these medical care programs? For the most part, as we have seen, the programs have developed independently of health departments. Yet there is a clear trend toward the establishment of closer relationships, ranging from an indirect, consultative role for the health department to full assumption of administrative responsibility for medical care programs.[8-9] Other speakers on this panel will describe such functions in specific areas.

Regardless of any direct role in the administration of categorical programs, there is another role that can be played by the health department in any community. It is evident from our bird's eye view of an average county that coordination of the various programs is needed. Wasted effort for both the public and the agencies could be avoided by having a single source of information, from which referrals could be made to the appropriate agency. Savings could be made in administrative expenses. There may be little need for eliminating duplication—since even in fields where multiple agencies are at work, full needs are seldom met—but coördination would highlight the areas where gaps are largest and focus new efforts in those fields. A community health council might serve to bring organized groups together, but the full-time official health agency could probably do the best job of day-to-day coördination.

Through taking leadership in this way, health departments can contribute qualified professional guidance to many medical care programs that might otherwise lack it. They can also acquire experience for the possible time when, in each community, one agency might be involved in the administration of all organized programs of health service, whether preventive or therapeutic in purpose.

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Experience with Gelfoam Biopsy in Routine Cancer Diagnosis*

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PAPANICOLAOU [1] and his coworkers and others have definitely established the practical position of the study of exfoliative atypical epithelial elements and this constitutes a distinct advance for early cancer diagnosis. It is best suited for lesions where the growth tends to replace the surface epithelial layer and where the cancer cells tend to collect for study as they appear in the external discharges *continually* over a long period.

This is probably best seen in carcinoma of the cervix and in carcinoma of the bronchus. The bronchial mucosa is often replaced for considerable distances in bronchial cancer, and such replaced mucous membrane tends to undergo autolysis and ulceration, leading to the continual release of tumor elements into the bronchial lumen and mucus. Similarly, cervical epithelium is very often replaced in cervical cancer while still in the *in situ* stage without invasion. This stage of the disease usually lasts for a considerable period before invasion occurs and thus offers the opportunity for an early diagnosis in cervical cancer, which may be lost if this method of investigation is not used. Such replacement of cervical mucosa may extend for a wide area and result in a wide superficial zone of disorganized disoriented altered cells. Such altered mucous membranes present a loosely held, and easily desquamated, superficial zone of cells, again appearing continuously in the vaginal discharges. Actual fragments of tissue, as well as individual cells, may occasionally appear.

Some forms of carcinoma of the fundus would give similar expectations, but other forms such as adenoma malignum, do not tend to ulcerate or necrose early, and would not tend to yield such free atypical cell elements early and frequently in the vaginal discharge. Nor would one expect an early scirrhous adenocarcinoma of the prostate that starts near the capsule, with an early scirrhous reaction involving the stroma, rather than within the duct systems and the ascini, to desquamate characteristic atypical epithelial cells at an early stage into the urethra with or without prostatic massage. The morphological cytological variations in well advanced cancer of the prostate are often not too far removed from irritative, inflammatory, and hyperplastic changes in this organ. This adds materially to the difficulty of interpretation. Nor is this method distinctly applicable to a scirrhous carcinoma of the breast where no discharge appears at the nipple for identical reasons. It can be applied to the intraductal papillary tumors of the breast, where the cells desquamate into a cystic cavity and the fluid can be aspirated for such studies.

Exfoliative cytological studies have some distinct disadvantages however. It

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has already been noted that the tumor cells must reach the surface and should exfoliate frequently if not continually. Some tumors just do not behave in this fashion, at least in an early stage. Again, if few cells are present, the entire smear will require diligent search and a few tumor cells can be easily overlooked. Changes of degeneration occur in cells after they desquamate, while they are exposed to the autolytic action of the secretion that bathes them, over varying periods, and this alters their appearance, causing pyknosis and other changes in the nuclei. This in turn occasions additional difficulty in proper identification and interpretation, and requires considerable skill and time.

From the standpoint of cancer detection, Foote and Li[2] noted that, allowing only 10 minutes for each of two slides, with an incidence of carcinoma existing as 1 in 1500 women over the age of 35, it would require 500 hours of microscopic study alone to detect a single case of cancer of the cervix by the exfoliative smear method. This approaches the impractical for the population as a whole.

The Gladstone[3] Gelfoam procedure does avoid some of these difficulties. Gelfoam is a spongy gelatin preparation with a fine porous structure which absorbs particles and fluid on its surface and deep in the interstices of the mesh. Viable cells are dislodged by the Gelfoam and held tenaciously by the glue-like action of the gelatin, and appear finally on the small stained area of the Gelfoam block, permitting rapid localization and study by the pathologist. Such dislodged cells are immediately put in the fixative, avoiding subsequent degeneration, leaving only the degeneration which occurs *in situ*. By this procedure we do not have to wait for the cells to come away of their own accord by autolytic processes. The number of cells that can be obtained by brisk rubbing of the surface is considerable, and is sufficient so that a single microtome plane of section will include tumor elements. The accuracy of the Gelfoam procedure can be enhanced considerably by embedding several Gelfoam fragments and taking several sections from the same block at different levels. The pathologist knows in advance where on the slide he must focus his attention. The aggregate of cells is nearly always large enough to be seen with the low-power objective, and frequently with the naked eye. With larger aggregates of cells, it is often possible to get a good idea of the histology as well as the cytology of a suspicious lesion.

TECHNIQUE AND APPLICATIONS

Attention to detail is of importance for the successful use of Gelfoam. Gelfoam is supplied commercially in sheets measuring 12.5 x 8 x 1 cm. This small sheet can be cut with a scalpel into 8 or 10 long strips about 1 cm. wide. Thin strips or slices are now cut off like slices of bread about 0.1 to 0.2 cm. thick. In doing this, it is important to use no pressure on the scalpel, as this crushes rather than cuts the Gelfoam. The blade should be sharp. It is desirable to keep the size of the pieces of Gelfoam as small as possible. Although the exact dimensions are immaterial, fragments obtained by the above procedure, measuring 1 x 1 x 0.2 cm. to 0.8 x 0.8 x 0.1 cm. are readily handled and offer the advantage of larger unit surface area per unit of volume. The smaller fragments can also be readily employed through endoscopic instruments.

The spongy, porous and glue-like properties make the Gelfoam desirable for obtaining cells and particles of tissue for study. If preparations are to be studied by the Papanicolaou cytological technique, the saturated Gelfoam fragment is preferable to cotton for smear preparations on clean slides to be fixed immediately. We would recommend

the use of Gelfoam for this purpose for those who prefer the use of smear preparations alone. The same Gelfoam fragment may then be immersed in the fixative routinely used in the particular laboratory.

The used Gelfoam is handled by the technician with the same technique used for other routine surgical specimens. In our laboratory, the fragments are dehydrated in alcohol, embedded in paraffin, cut at 7–8 μ and stained with H & E in the usual fashion. The embedded block must be well *chilled* on ice, just before cutting on the microtome, if fragmentation of the section is to be avoided. This detail is imperative for good thin sections.

For a Gelfoam biopsy of an external lesion or a lesion which can be visualized, as a cancer on the portio of the cervix, simply wipe the Gelfoam across the suspicious area several times. Any holding device, or the special forceps devised by Gladstone, can be used for this purpose. If a larger fragment of Gelfoam is used, the used surface must be identified by staining with merthiolate, mercurochrome or other dye, so that it can be properly oriented for embedding in the block for sectioning. By using similar fragments and exposing them on both sides, we avoid the necessity of this step entirely. Repeating the rubbing after the same fragment of Gelfoam is allowed to dry until it is tacky, increases the yield for study.

Tissue and aspirated fluids are very easily handled by means of Gelfoam. Large volumes of fluid are allowed to sediment. The supernatant is poured off and the sediment placed in a Petri dish. Several pieces of Gelfoam are grasped in a mouse-tooth forceps, squeezed and then immersed in the fluid. Care must be used in this step. The more carefully suspicious looking fragments are selected, and the more the air is forced out of the Gelfoam fragment to be displaced by fluid, the better the preparations will be. Preferably, several pieces of Gelfoam should be used. Larger particles or clots can be wrapped around the Gelfoam. Smaller volumes of fluid can be centrifuged and treated in a similar fashion. A few drops of material recovered from the tip of a needle, can be completely salvaged by absorbing the entire specimen on a piece of Gelfoam.

We have successfully used Gelfoam with pleural and abdominal fluids, sputum, urine, and fluid from an echinococcus cyst. We have not thus far obtained a positive preparation using Gelfoam attached to a string and swallowed by the patient with several suspicious stomach lesions. Firmer sponge material seems preferable for this purpose. Gelfoam is ideal for endoscopic use, for it is fully digested and absorbed if lost within the body, not acting like a foreign body.

The surgical pathologist and histological technician are frequently called upon to deal with biopsy fragments so small that they get caught in the teeth of the forceps and are easily lost. Recently Dr. Leff of our department resolved this difficulty by absorbing these minute fragments of tissue upon a segment of Gelfoam.

The above does not exhaust the applications of this adaptable material. Everyone who uses Gelfoam will find some additional uses for it as an aid in diagnosis and otherwise.

The great advantage in the Gladstone Gelfoam procedure is in the *time saving*, both in the preparation of the slides and in their study. The skilled pathologist is working with a medium with which he is already acquainted and knows where to look on the slide, without preliminary widespread search. It is this economy of skilled personnel that can bring the *routine detection survey* into the practical realm. To obtain this important gain, we do make sacrifices in this method. We sacrifice some of

the cytological detail, the nuclei are not as beautifully stained. The routine formalin fixative is not comparable to that used by Papanicolaou. Formalin is a histological and not a cytological fixative. We hope that a better all round fixative can be applied to this method which would give us the advantage of better nuclear preparations for study and evaluation.

TABLE 1

Correlation of Positive Findings in 68 Females Suspected of Uterine Cancer

Squamous Cancer	*Biopsy*	*Pap.*	*Gelfoam 1 sect.–2 sect.*	
Grade II	4	4	3	1 (Susp.)
Grade III	4	4	4	0
Grade IV	1	1	1	0
Ungraded	4	4	1	3
Adeno Carcinoma	2	2	0	1

TABLE 2

Errors Judged by Biopsy

Total number of cases	68
Biopsy, Gelfoam and Smears Negative	46
Gelfoam False Positive	0
False Negative	2
Papanicolaou Smears Class IV	3
Class III	2
Papanicolaou Smears False Negative	0

DISCUSSION OF RESULTS

Rich, *et al.*[4] in our laboratory have carried out a comparative study of vaginal cytological smears, Gelfoam section, and routine surgical biopsy specimens. The details of this study are presented elsewhere, but a summary of the findings is given in the two tables below. The qualitative nature of the variations found in this study, so necessary for a proper analysis and understanding of comparison values, will not be presented here. The bare tabular and statistical approach to such comparisons is quite inadequate. It is in the qualitative detail, as it applies to the individual case, that the significance of advantages and disadvantages of the particular procedure is to be found. The smear preparations were surveyed meticulously for 20 minutes by one observer who had studied with Dr. Papanicolaou and presumably possessed the average skill. The smears were then reviewed again as marked by another observer. Two smears were studied as a minimum. The Gelfoam preparations were included with the rapid surgical routine only. They were examined invariably, in a rather hurried manner, and never for more than a minute or two. On this basis the general overall impression gained from working with the Gelfoam method is that it has distinct value.

In 68 cases admitted to Queens General Hospital with a suspicion of cancer of the uterus, 14 cases of cancer of the cervix were proved by biopsy. The Papanicolaou smear was positive in all, while the initial quick scanning of one section of Gelfoam slide was negative in 6 of the cases. These 6 cases were found positive upon recutting an additional section of the same block of embedded Gelfoam. On this score, it must be noted that although the Papanicolaou smears were listed as positive above, very often many smears were required and taken. In two of the cases of adenocarcinoma of the fundus, the Papanicolaou smear was positive in both, and the Gelfoam was suspicious on the initial examination and then fully positive in one in the second section. In this study of 68 cases admitted to the hospital with a suspicion of cancer, there were 5 cases reported falsely as positive by the exfoliative smear technique using cytological criteria. Two of these were reported as suspiciously positive and 3 as definitely so, or grade IV, by Papanicolaou's classification. There were no false positives by the Gelfoam procedure (Tables 1 and 2).

GENERAL DISCUSSION

Any laboratory report must never be given undue emphasis, and this applies doubly to the report based upon cytological studies only. The dangers of a

"false negative" report should not be underestimated. Complete reliance upon the single smear examination, in the face of clinical indications to the contrary, or of a visible suspicious lesion, is bound to do distinct harm to the patient and bring unwarranted discredit upon the method. A "false positive" report can unleash the over-zealous surgeon to proceed with an unwarranted radical and mutilating operation. Such radical surgery seems exaggerated, if not wholly unnecessary, when only normal tissue is found in the entire removed surgical specimen. The surgeon may well accept the adulation of the patient and his family for obtaining an apparent cure under such circumstances, but one wonders whether the method should not be credited rather than debited for same. Only time will tell whether a radical Wertheim procedure is warranted for an early intraepithelial cancer of the cervix. We may agree that to cure cancer it must be dissected from the patient, and yet question whether the patient should be dissected away from the early intraepithelial lesion by a wide removal of normal organs and tissues. This glib readiness to accept the laboratory report blindly and the confidence of the dexterous surgeon in the performance of major surgery, when applied over the broad base of the country as a whole, surely constitute additional hazards for the method.

A pathologist must state emphatically, that generally the diagnosis rendered on the *single surgical biopsy has greater weight* than the opinion rendered on the single smear preparation. The ample surgical biopsy is itself not absolute but represents a compromise in the study of cancer, and in the problem of diagnosis. The surgical biopsy is a most important pragmatic diagnostic procedure for institution of therapy. If the ample surgical biopsy represents a compromise in such study, then the newer cytological studies are further additional compromises of equal or greater magnitude. There is no royal road to diagnosis in the form of any single morphological criterion.

It is worth while at this juncture to recall that the evaluation of malignancy in the cancer problem is an intangible concept only, which we read into and interpret in the study of tissue submitted. Malignancy is not an entity and does not possess specific form, substance, or pathognomonic criteria. The degree of malignancy, the accuracy of diagnosis, and the exactness of classification can be best applied by the use of all the several different criteria of appearance and behavior; and uncertainty diminishes as the number of criteria increase. The accuracy in expert hands of cytological diagnosis is remarkable, and undoubtedly very often approaches that of routine surgical diagnosis. The criteria for cytological diagnosis can often be applied earlier, when therapy is most promising. This constitutes the important asset of cytological diagnosis.

A pathologist would expect the multiple cancer processes in different organs (with different etiology and morphology, varying rates of growth, complex biological behavior with normal and abnormal functions, occasional stimulation of fibrosis or bone formation, and different tendencies to invade locally or to migrate distantly, and finally varying capacity to take root when they do metastasize, and to continue to grow); to show differences which must be reflected in any single procedure for early diagnosis, whatever it may be. It is our belief that this will apply to tests of a serological or biochemical nature, as it does to morphological changes. Every pathologist will concede that a considerable range of variation, with an intermediate problematical zone, is found for the histological and cytological criteria of malignancy. Every pathologist has encountered difficulty, with ample his-

tological and cytological material available, in identifying a cancer process as such, and in distinguishing exactly when a stimulated proliferation on the basis of inflammation or irritation has gone on to become an autonomic cancerous lesion. It is but natural then for the pathologist to accept with conservative precaution, any single test procedure as an absolute pathognomonic diagnostic approach for the diagnosis for all forms of cancer at its inception.

All of the above procedures, the Papanicolaou smear, the Gelfoam and the surgical biopsy, have their proper place in the problem of diagnosis for the detection of early cancer. Every individual procedure must be oriented to the skill of the individual observer, and be related properly to the entire problem of cancer study, diagnosis, and prevention. All data from all sources must be integrated and must be properly weighed and related to the clinical possibilities by good clinical judgment. We must always realize that the entire problem of cancer diagnosis is not a mathematical science, but remains in the realm of the art of medicine.

SUMMARY AND CONCLUSION

Until the causes and pathogenesis of cancer are well established, cure must depend upon early recognition. Success is directly related to the recognition of the cancer process at or close to its inception. No single absolute criterion or test for all malignancy exists and there is reason to doubt the likelihood that any single test procedure will detect all of the varying forms of the cancer process at its inception.

We still must depend upon the histological and cytological criteria for diagnosis, despite the fact that no single absolute morphological feature of malignancy exists in this realm either. On the whole, histological and cytological criteria are very reliable.

The morphological diagnosis of cancer by means of the surgical biopsy and exfoliative cytological studies is discussed from the standpoint of their inherent limitations and advantages. The standard histological methods and the exfoliative cytological studies are not in opposition and mutually exclusive, but rather complementary. Each has its considered position in cancer diagnosis and is most efficient in its own individual realm. The importance of cytological studies for early diagnosis is stressed.

The technique for the Gelfoam biopsy, as suggested by Gladstone, is given in detail with some minor modifications.

The impressions gained from a comparative study of the Papanicolaou smear and the Gladstone Gelfoam biopsy procedures in 68 cases of admission, suspected of cancer of the uterus, are presented and compared with the findings at surgical biopsy.

The advantages and limitations of the Gladstone Gelfoam procedure are compared with those of the Papanicolaou smear study method. The Gelfoam procedure has the advantage of simplicity, requiring no special technique or training and permitting of rapid study and evaluation. The Gelfoam procedure is presented as a versatile practical routine procedure for surgical diagnosis and for survey detection purposes.

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Technics and Circumstances in the Bacteriologic Diagnosis of Tuberculosis*

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DURING the past two years we have been evaluating bacteriologic methods used in the laboratory diagnosis of tuberculosis. For one year, divided specimens were tested in our laboratory and in the laboratory of the Tuberculosis Division of the U. S. Public Health Communicable Disease Center in Atlanta, Ga. During the course of this work we became increasingly aware of certain factors which influence the success or failure of diagnostic methods. We began to study these in greater detail under controlled conditions and were led to observations that seem to be of particular importance to public health laboratories.

EFFICIENCY OF STANDARD TESTS IN RELATION TO THE SOURCE OF THE SPECIMENS [1]

It is obvious that tubercle bacilli can be found most easily in specimens that contain many microörganisms. The majority of specimens from patients in sanatoria are of this type. Sixty to 85 per cent of the total specimens sent to us from sanatoria contain tubercle bacilli. The majority are positive by smear alone and most of those examined by culture develop more than 100 colonies on each tube of medium. In strong contrast to these, are the characteristic specimens examined in a public health laboratory.

We find tubercle bacilli in 15 to 25 per cent of the specimens we receive from the general public. Smears fail to demonstrate the microörganisms in the majority of cases, and the ones which are positive by culture usually develop fewer than 25 colonies on each tube of medium.

Table 1 illustrates the differences we observe in the efficiency of standard tests applied to each of these two types of specimens. We define the efficiency of a test as the number of specimens in which the test demonstrates tubercle bacilli, as compared to the total number of specimens in which the bacilli are actually present. In field material we never know the absolute number of positive specimens. We approach it by determining the number in which bacilli are found by one or more multiple test methods. Thus, all the specimens represented in Table 1 were studied by at least five tests, i.e., direct and concentrate smears and direct, supernatant, and concentrate cultures after NaOH or Na_3PO_4 digestion. Sixty per cent of the specimens were also tested in one or two guinea pigs. The direct smears were prepared by removing several loopsful of material from the raw specimen, after 15 minutes homogenization in a three-dimensional paint conditioner. All smears were stained by the standard Ziehl-Neelsen technic, using a methylene blue counterstain. The direct cultures were prepared from 1 ml. aliquots of the raw specimen after homogenization for 15

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TABLE 1

Efficiency of three standard technics in the examination of sanatorium and field specimens

	Sanatorium		*Field*	
	No.	*%*	*No.*	*%*
Specimens	775		804	
Mycobacteria found by 1 or more tests	636	82.0	172	21.3
Mycobacteria found by:				
Smear—Ziehl-Neelsen staining	414	65.0	81	47.0
Culture—4 tubes of Löwenstein-Jensen (modified) medium	569	89.4	126	73.2
Inoculation of guinea pigs	277/318*	87.1	92/116*	79.2
Contaminated cultures (4 tubes)	42	5.4	87	10.8

* Number of guinea pigs inoculated in the total number of specimens positive in one or more tests.

minutes with 4 per cent sodium-hydroxide or 23 per cent trisodium-phosphate. Supernatant cultures were made from 1 ml. of the supernatant fluid obtained after centrifugation of the homogenized specimens. All cultures were made on four tubes of modified Löwenstein-Jensen medium and were incubated at 37° C. for 8 weeks. Normal tuberculin-negative guinea pigs were inoculated intramuscularly with 1 ml. of the neutralized concentrates and were sacrificed at 8 weeks. These studies were performed by a single group of technicians using standardized technics, common supplies, and the same culture room and incubator.

The best combinations of the standard concentrate smear, culture, and the guinea pig tests or both failed to demonstrate tubercle bacilli in 10 to 20 per cent of the field specimens in which the microörganisms actually were found by some one of the above five tests. Smears alone are less than 50 per cent efficient in field material; cultures alone, about 75 per cent; and guinea pigs, 80 per cent. All three standard tests alone or in combination have a significantly higher efficiency when used on sanatoria material. Seventy per cent of the positive sanatoria specimens were positive in all of the five tests used. Only 35 per cent of the positive field specimens achieved this score.

Tubercle bacilli were demonstrated by a single standardized culture technic in 80 per cent of 210 samples of pooled positive sanatoria sputa held under controlled conditions of temperature for 1 to 15 days. Under the same conditions, and using the same cultural technic, we were able to recover the microörganisms in 46 per cent of 210 samples of pooled field sputum, each of which was originally inoculated with many living tubercle bacilli.

Field specimens not only contain fewer bacilli than do sanatoria specimens but standard tests are less effective in demonstrating these microörganisms. Perhaps our test methods simply fail to demonstrate the presence of small numbers of microörganisms, or perhaps the bacilli in these specimens are more adversely affected by their environment or by laboratory treatment.

CONTAMINATION

Contamination is a much greater hazard in the examination of field specimens than of those from sanatoria. The latter are collected from a public educated to handle sputa with caution. The former enjoy no such advantage. The specimens are subject to gross contami-

nation during collection and to many alterations during transportation.

Table 2 illustrates some of our experiences with contamination. Twice as many cultures of field specimens are completely lost because of contamination as are cultures of sanatoria specimens. The effect of this greater degree of contamination imposed on the fewer microorganisms present in field specimens is of considerable practical importance.

TABLE 2

Frequency of contamination in cultures of sputa

	Sanatorium		*Field*	
	Without penicillin	*With penicillin**	*Without penicillin*	*With penicillin**
No. of specimens	626	630	2,307	1,949
No. contaminated in any tube	211	52	992	365
One tube contaminated	15.5%	5.9 %	17.7%	6.8%
Two tubes "	6.9	0.64	8.6	2.7
Three tubes "	5.8	0.79	4.6	2.6
Four tubes "	5.4	0.95	10.9	6.7
Total	33.6%	8.2 %	41.8%	18.8%

* 200 units of penicillin G added to neutralized concentrate prior to culturing.

The percentage of culture tubes bearing mycobacterial colonies in positive sanatoria and field specimens is shown in Table 3. Growth occurs on all tubes in the great majority of the former but, in the latter, the frequency of specimens positive in only one tube is greater than in four tubes. It is evident that the chances of missing positive cultures due to contamination of only one or two tubes must be greater in field specimens than in those from sanatoria.

TABLE 3

Distribution by tube of mycobacterial colonies in routine and sanatorium specimens

	Sanatorium	*Field*
Number of specimens	1,975	28,280
Mycobacteria found	898	3,062
Mycobacteria found in		
1 tube	6.7%	29.8%
2 tubes	8.7	22.6
3 tubes	11.3	22.3
4 tubes	73.0	25.1

We never know absolutely how many positive specimens are lost because of overgrowth of culture tubes by contaminants, but on the basis of the data shown in Tables 2 and 3 we can calculate how many might be lost. According to the contamination rate and the distribution of growth by tube characteristic of both types of material, the loss of positive specimens due to contamination would be four times greater in field specimens than in sanatoria specimens. In the latter case, a single contaminated tube could exclude 1.67 per cent of possible positive specimens. Two contaminated tubes could account for 4.8 per cent, and three contaminated tubes for 12.18 per cent. In the case of field specimens the corresponding figures would be 7.45, 18.63, and 39.97 per cent. Applying these calculations to 10,000 field specimens, 20 per cent of which are positive according to the growth pattern of the 3,062 specimens recorded in Table 3, and 40 per cent contaminated according to the pattern of the 2,642 specimens recorded in Table 2, the number of possible positive cases which might be lost due to contamination would be 4 per cent. Another 4 per cent would be lost due to the known 20 per cent deficiency of standard smear and culture technics. Thus, it is possible to calculate with some certitude that approximately one-third of the possible positive cases in field material may be lost because of contamination and defectiveness of standard diagnostic methods. Specimens

TABLE 4

Influence of time and temperature on the cultivation of Mycobacterium tuberculosis

Age in days	*1*	*2*	*3*	*5*	*7*	*10*	*15*	*Totals*
				Sanatorium specimens				
Temperature								
5° C.	30	30	30	30	30	30	30	210
30° C.	30	28	23	25	29	25	10	170
37° C.	30	30	25	24	15	0	0	124
								504 (80%)
				Field specimens plus tubercle bacilli				
5° C.	29	30	30	30	28	30	30	207
30° C.	27	22	14	4	9	4	1	81
37° C.	3	0	1	0	1	0	0	5
								293 (47%)

from the field certainly deserve more thorough cultural study than those from sanatoria patients and greater efforts should be made to suppress contaminating organisms.

TIME AND TEMPERATURE

During the course of our evaluation studies it became quite evident that the shipment of specimens between Albany and Atlanta introduced a number of factors which affected the results obtained in each laboratory. Since then, we have been methodically measuring the influence of temperature and time under controlled conditions. Field sputa specimens subjected to temperatures above 5° C. for more than a few days rapidly deteriorate. As shown in Table 4, at 5° C. no appreciable loss of viable microörganisms was detected by culture in 210 samples of field sputa inoculated with many living tubercle bacilli and examined at intervals of 1, 2, 3, 5, 7, 10, and 15 days. Similar specimens maintained at 30° C. showed only 81 of 210 remaining positive for from 1 to 15 days. At 37° C. only 4 of 210 samples remained positive during the same period. In another group of 210 exposed to 37° C. for 15 hours and held thereafter at 20° C., only 10 remained positive during the same test period. Sanatoria specimens show less deterioration at 30° C., although they also deteriorate quickly at 37° C.

The causes responsible for these changes have not been determined but it is evident that specimens collected from the general public and mailed to the laboratory may frequently be exposed to circumstances which destroy their suitability for accurate bacteriologic examination.

DISCUSSION

There is a tendency for laboratory workers to fix their attention on the elaboration of technical procedures. In our experience this may be of less importance in the bacteriologic examination of specimens than the simple practical problems of prompt collection, care in minimizing contamination, suitable storage, and prompt delivery of the specimen. These factors seem so weighty that every effort should be made to have the examinations performed locally.

The same factors should also be given careful consideration in the evaluation of new diagnostic methods. Results obtained by different laboratories may differ widely depending on the sources of specimens and their condition at the time they are examined. The differences may not be due to the superior virtues of particular test methods.

Our experience also suggests that there are factors in the relationship between the tubercle bacillus and its environment that are not clearly understood and may appreciably modify the

success of our diagnostic tests. Differences in the vitality of tubercle bacilli in specimens from different sources may be of considerable significance.

CONCLUSIONS

1. There is a significant difference in the efficiency achieved by standard laboratory tests for tubercle bacilli when specimens from sanatoria patients and the general public are examined.

2. The rate of complete contamination in field specimens is twice as great as it is in sanatoria specimens, and the chance of missing positive specimens due to partial contamination is four times as great in field specimens as it is in sanatoria specimens.

3. There is a rapid loss of viable tubercle bacilli in field specimens exposed to temperatures of 30°–37° C.

4. Every effort should be made to examine specimens in laboratories close to their source. Specimens should be collected carefully to minimize contamination, should be kept as cool as possible, and examined as soon as possible by multiple-test methods.

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National Science Foundation

Congress has passed and the President has signed the bill creating a National Science Foundation. The act directs the Foundation to:

a. Develop and encourage a national policy for promoting basic research and education in the sciences
b. Make grants and loans for research
c. Award scholarships and graduate fellowships
d. Foster interchange of scientific information among scientists both here and abroad
e. Evaluate federal scientific research programs and correlate the Foundation's program with other research programs
f. Maintain a register of scientific and technical personnel

The Foundation is established as an independent agency with a National Science Board of 24 members appointed by the President and confirmed by the Senate. The chief executive officer is appointed by the President on recommendation of the Board. The four divisions created at the outset are on medical research, mathematical, physical, and engineering sciences, biological sciences, and scientific personnel, and education. The first year's appropriation, limited to $500,000, will enable the Foundation to establish its organization and survey the nation's research needs and the means of meeting them.

The Role of Technical Societies in Industrial Health*

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THE terms "technical societies" and "industrial health" do not connote the same meanings to all people. Therefore (and without trying to justify them as the best selection of words), I will describe briefly what meaning will be ascribed to these terms throughout this paper. The technical societies to be included in this discussion are not all "technical" in the strict sense of the word. They are professional associations whose membership is made up largely of technical personnel from professions other than the medical, nursing, and dental professions. Examples, and, incidentally, the societies to which most of this paper will be devoted, are the American Industrial Hygiene Association, the American Conference of Governmental Industrial Hygienists, the American Society of Heating and Ventilating Engineers, and the Industrial Hygiene Section of the American Public Health Association. It must not be inferred that these are the only professional associations or technical societies which have contributed and are continuing to contribute to the promotion of industrial health. There are many others too numerous to mention. Some of the better known are the American Society of Mechanical Engineers, the American Institute of Mining and Metallurgical Engineers, the Illuminating Engineering Society, the Acoustical Society of America, the American Foundrymen's Society, the National Association of Manufacturing Chemists, the National Safety Council, the American Standards Association, and the American Chemical Society. Obviously time will not permit me to touch even briefly upon the role played by some of these many and varied organizations in the huge task of maintaining the health of the industrial worker at a high level.

The term "industrial health" as employed in this discussion will relate almost wholly to illness and discomfort prevention among industrial employees through control of those environmental factors which produce ill health. The maintenance of industrial health at a high level is primarily a matter of preventing illness and discomfort, not of curing them. Prevention by eliminating environmental causes is the first, and probably the most important step, in keeping industrial health on a high plane.

The American Industrial Hygiene Association contributes to the improvement of industrial health by (1) increasing the knowledge of industrial hygiene through interchange and dissemination of information, (2) promoting the study and control of environmental factors affecting the health and well-being of industrial workers, (3) correlating such activities as are conducted by individuals and agencies throughout a wide range of industrial, educational, and governmental groups, and (4) bringing together persons interested in the various phases of industrial

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hygiene. These objectives are attained via different routes, among which are the encouragement of local sections, publication of a journal, holding annual convention meetings, and participation in related associations and on appropriate committees.

Even though the A.I.H.A. is a young organization and a small one in terms of membership, it has 19 local sections scattered throughout the country from New England to California and from Chicago to Georgia. These local sections serve a most worth-while function in the education of allied personnel such as physicians, ventilating engineers, nurses, and safety engineers who do not qualify for membership in the parent association. The number of meetings held annually by the different sections varies from one or two to about nine, depending upon the wishes of the section. Attendance is good at these meetings. For many of those attending, it is the only firsthand contact they have with industrial hygiene since their primary interests are in other, even though allied fields. The good this has done in making more people industrial health conscious can be easily imagined.

Through the journal of the association, the A.I.H.A. *Quarterly,* information of a general nature in industrial hygiene is placed before an ever expanding audience. The technical papers presented at the annual convention meeting are published in other related journals, such as the *Journal of Industrial Hygiene and Toxicology* and *Industrial Medicine*. Other technical information on industrial hygiene is disseminated by publication of articles in a host of journals, including *Heating and Ventilating, Occupational Medicine, Heating, Piping and Air Conditioning, American Foundryman, Industrial and Engineering Chemistry, National Safety News,* and *Safety Engineering*. Hence, the A.I.H.A., directly or indirectly, is reaching more and more people with more and more informative material on all phases of industrial health.

The annual convention meeting of the association is held jointly with the American Conference of Governmental Industrial Hygienists, the American Association of Industrial Physicians and Surgeons, the American Association of Industrial Nurses, and the American Association of Industrial Dentists. By meeting with these other groups, an excellent opportunity is provided for the mutual interchange of information between these related professions, all of which have a part in the promotion of good industrial health. The educational and promotional influence of the annual convention meeting is not limited to members of the participating groups in attendance, but extends to the inhabitants of the city in which the meeting is held because of the newspaper space which this joint gathering commands.

The A.I.H.A. is one of the few technical societies that have not undertaken directly the development of technical information or reports along one or more of the lines of its interest. It has sponsored or co-sponsored certain standards promulgated by the American Standards Association. It has representation, some official, others unofficial, on all committee work of this kind in related societies, and has acted as sponsor for any number of special meetings on matters having a bearing on industrial health.

The American Conference of Governmental Industrial Hygienists is making signal contributions to industrial health. Of the ten committees presently working in this association, at least seven are assembling or developing information of value to all workers in industrial health. The work of these committees is of sufficient moment to warrant brief discussion.

The Industrial Ventilation Committee is in the process of assembling a good practice manual. Work on the manual is progressing at such rate that it is ex-

pected to be ready for publication soon. Recognizing, as we do so well, the importance of proper ventilating techniques in industrial atmospheric sanitation (including temperature control) it is hard to overestimate the important role such a manual will play in industrial health. This is especially true, because the entire field of industrial ventilation is in something of a turmoil brought on by the fact that it is undergoing transition from the rule-of-thumb era to one of scientific design.

The Industrial Hygiene Codes Committee has completed its work on the proposed Uniform Industrial Hygiene Code and has submitted it to the American Standards Association for consideration as an A.S.A. Standard. This same committee is preparing proposed uniform industrial hygiene codes for dry cleaning operations and for shoe-fitting fluoroscopes. These codes or standards, if carefully drawn, will be a great help to everyone in industrial health work as well as to the owners or supervisors of equipment covered in the codes. Other similar standards on specific operations are to be promulgated as time permits.

Several years ago, the Threshold Limits Committee adopted a rather large list of threshold limits (or maximum allowable concentrations as they are often called) for atmospheric contaminants of importance in industry. New materials are added to the list from time to time and the limits are changed periodically for any of the substances which have been shown to warrant such action. Similar lists had been assembled by others prior to the time the list was adopted by the conference. Nevertheless, for those of us in the field of industrial health who have need for these values almost constantly, it is assuring to know that the job of keeping the list up to date has been assumed by a designated organization. To the engineer who is faced with the problem of maintaining the sanitation of the industrial atmosphere at a level conducive to the well-being of the worker, the table of threshold limits is invaluable.

The Committees of the Conference on Dust Counting, on Standardization of Air Sampling Techniques, and on Standard Methods contribute materially to industrial health by investigating sampling and analytical methods and procedures for air analysis. Concentrations of atmospheric contaminants found in field studies are no better than the instruments and techniques used to measure them, and the table of threshold limits is of little if any use unless standard methods and instruments are used to evaluate the atmospheric concentrations.

The Committee on Worker Health Information obviously has a role in industrial health also. No method, procedure or program which has as its objective the protection of the worker's health will be wholly successful unless the worker himself coöperates. Worker coöperation can be accomplished only by education.

Probably few people are aware of the important contributions made by the American Society of Heating and Ventilating Engineers to industrial health. It is one of the few technical societies to maintain and support a research laboratory of its own. It was in the early twenties, while the research laboratory was located in the Pittsburgh Experiment Station of the U. S. Bureau of Mines, that the classic study was done which resulted in the Effective Temperature Index. This index, as you all know, makes it possible to combine the temperature, the humidity, and the rate of air movement into one value which is representative of the sensation of warmth or cold felt by the human body. Today we should be completely lost without knowledge of this relationship. The Effective Temperature Scale has provided us with a very important tool not only for comfort ventilation, but also

for use in the scientific approach to the solution of problems brought about by extremes of heat and cold in industry.

More recently, this society conducted a research project, jointly with the Industrial Hygiene Division of the Public Health Service, on specific phases of local exhaust ventilation for the control of atmospheric contaminants. The findings from this work which was carried out in the Research Laboratory of the A.S.H.V.E. have been made available to workers in this field by publication in a journal of wide distribution as well as in the society transactions. It is unfortunate that this coöperative research program has not been continued. The research laboratory is well equipped for investigations into all types of projects having to do with industrial atmospheric sanitation. With advice and assistance from the Public Health Service, it might well serve as the leading source of reliable information on the control of airborne contaminants, just as it does on matters of heating and ventilating in general.

Early in 1947 the society organized a Technical Advisory Committee on Industrial Ventilation. This committee meets about four times annually. It has for its objectives "To obtain, and make available for A.S.H.V.E. members and particularly for those associated with industry, reliable, usable and practical information on the control by ventilation of industrial atmospheres, to meet the requirements of health, comfort, safety, production, materials recovery, and atmospheric waste disposal." The work of this committee, thus far, has been pointed toward taking the guesswork out of industrial ventilation practices and developing sound principles upon which the scientific solution of any ventilation problem may be based. It is apparent to all that the work of this committee and of the society has been and will continue to be far-reaching in its effect on industrial health.

Probably the best way to gain even a fair idea of the accomplishments of the A.S.H.V.E. is to scan a recent issue of the *Guide*, an annual publication of the society. In glancing through the 1949 edition, for example, one finds chapters devoted to subjects such as Natural Ventilation, Air Contaminants, Physiological Principles, Air Conditioning in the Prevention and Treatment of Disease, Air Cleaning Devices, Air Duct Design, Industrial Air Conditioning, and Industrial Exhaust Systems. These and other chapters obviously relate to different phases of discomfort and illness prevention. Unlike the usual book in a field that is advancing rapidly, the *Guide* is rewritten annually; it never grows obsolete or out-of-date. For many engineers whose work brings them in direct contact with problems of industrial health maintenance only occasionally, this publication by the society is their only source of reliable and current information on the problems at hand. There is little doubt that the *Guide* of the A.S.H.V.E. will become of increasingly greater value to all workers in industrial health as a result of the work being done by the Technical Advisory Committee on Industrial Ventilation.

Other Technical Advisory Committees of the society which have contributed and continue to contribute to industrial health include Air Cleaning, Air Sterilization, Insulation, Sensations of Comfort, and Sound Control.

The Industrial Hygiene Section of the American Public Health Association is another technical society that has had a profound influence on industrial health. Certain other sections and committees of the A.P.H.A. likewise have made signal contributions toward the promotion of health in industry.

Operating within the Industrial Hygiene Section are nine committees, each and every one of which is associated with a project or projects affecting industrial health. A review of the names of the

committees is sufficient to show their import to the health of the worker. They are Committee on Administrative Practices, Atmospheric Comfort, Chemical Procedures, Industrial Ventilation, Inter-Society Coöperation, Metallic Poisons, Methods of Examining Dusty Air, Pneumoconiosis, and Committee on Volatile Solvents. A total of 59 different people make up the committees. Since every committee member was selected for his prominence in the work at hand, it is apparent that the talent represented by these committees and the reliability of information reported by them is unsurpassed.

Most of the committees of the Industrial Hygiene Section have been reactivated or reorganized since the close of World War II. During the war period there was little committee activity. However, most of those in existence today had their counterparts for many years prior to the war. These several committees have sponsored research in their respective specialties and have prepared reports which have served as the guiding light for many workers in industrial health.

While time will not permit reviewing even briefly the contents of some of the reports prepared by these committees, I will cite the titles of a few of the more pertinent ones to demonstrate how fundamental is the information contained in them and how directly they are related to industrial health. In the A.P.H.A. *Year Book* for 1935–1936, for example, are reports on Chemical Procedures in Air Analysis: Methods for Determination of Poisonous Atmospheric Contaminants, Physical Procedures in Air Analysis: Instruments and Methods for Recording Thermal Factors Affecting Human Comfort, and on Dust Procedures in Air Analysis: The Sampling and Analysis of Industrial Dusts, among others. The material contained in these reports represented the last word in the subjects covered by them and served first, to bring about a certain degree of uniformity in procedures so that reported results would be comparable, and second, to educate many people in the techniques and instrumentation of sanitary air analysis. Subsequent *Year Books* contained reports on these same subjects which were augmented or changed as needed to keep abreast of the times in this rapidly developing field. Other reports which also had a healthy influence on the improvement of the industrial environment were prepared and published by the different committees. Some of the more important ones had to do with procedures and methods for bacteriological studies of the air, compensation for occupational diseases, and methods for the measurement of specific air-borne contaminants.

Because of the large field encompassed by the subject of this paper, I cannot avoid doing an injustice to certain other committees and Sections of the A.P.H.A. The Engineering Section through its Committee on Industrial Sanitation to mention only one, and the Committee on Administrative Practice through its Subcommittee on Industrial Health Appraisal have influenced the industrial health picture. Other committees such as the Joint Committee on Research Problems in Illumination, Subcommittee on Air Sanitation, and the Subcommittee on Accident Prevention are all adding their weight to the tremendous task of maintaining the health of the industrial worker at an increasingly high level.

It is unfair to conclude this paper without referring briefly to the work of the American Foundrymen's Society, the National Safety Council, and the American Standards Association in industrial health. The A.F.S. (formerly the American Foundrymen's Association) developed about six codes or good practice manuals which have exerted no little influence on the great strides made in foundry dust control in the last decade or two. Outstanding among these codes are *Code of Recommended*

Practices for Industrial Housekeeping and Sanitation; Fundamentals of Design, Construction, Operation and Maintenance of Exhaust Systems; Code of Recommended Good Practices for Metal Cleaning Sanitation; and *Grinding, Polishing and Buffing Equipment Sanitation* which was accepted by the American Standards Association and issued as one of its standards.

The National Safety Council has prepared many Health Practices Pamphlets on different phases of industrial hygiene and distributed them widely. For our colleagues, the safety engineers, and for many others, these have been of inestimable value in finding answers to the many problems they fall heir to.

The American Standards Association has had large and well rounded committees develop codes or standards along several lines directly related to industrial health. Some of these publications report on the toxicity or maximum allowable concentrations of specific air-borne contaminants. Others report on good practices for air sanitation at specific operations such as electroplating, and on fundamentals relating to the design of ventilating systems for air sanitation. Through standards of this kind the A.S.A. has provided and is continuing to provide many people engaged in industrial health work with answers to some of the more perplexing problems facing all of us.

Industrial Hygiene Mobile Unit

Said to be the only one of its type in the country, an air pollution and industrial hygiene laboratory has been placed in service by the Bureau of Industrial Hygiene of the Pennsylvania State Health Department. The laboratory is equipped with scientific devices for field sampling and quantitative and qualitative analyses of atmosphere. The new Air Pollution Division of the Industrial Hygiene Bureau will operate the laboratory.

The Division director is J. S. Sharrah of the Bureau's Pittsburgh laboratory, who has done considerable research in air pollution, including the Donora smog disaster. Joseph Shilen, M.D., is director of the bureau.

Role of Case Finding in Syphilis Control Today

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THE first big task in the modern syphilis control program was to awaken the medical profession and the public to the importance of syphilis as a public health problem. It may perhaps be agreed that the general public now has a satisfactory amount of interest in syphilis. Hardly a month goes by without a popular magazine featuring an article on the magic of present-day syphilis cures and telling how the application of these wonder drugs makes or could make possible the complete eradication of syphilis in a short space of time—only a few days to be exact. These articles have been useful in giving the public confidence in the effectiveness and safety of modern treatment, but at the same time they often give the lay reader and even the public health worker the impression that the problem of syphilis control has been solved.

Is syphilis less of a public health problem today than it was 10 years ago?

The reported mortality rate from syphilis in the continental United States from 1933 to 1939 was between 15 and 16 per 100,000 population. In 1940, the rate began a steady decline which continued through 1948, when the Public Health Service estimated the mortality rate to be 8.2.[1] This decrease is particularly meaningful in view of the increasing accuracy in the reporting of deaths due to syphilis. In 1933, first admissions to mental hospitals (exclusive of veterans' hospitals) for psychoses due to syphilis occurred at the rate of 6.6 per 100,000 civilian population. This rate remained at the same level until 1943 when a decrease to 5.4 was reported. The figures for 1947 show a further decrease to 4.2 per 100,000.[1] Recognizing that deaths and disabilities due to syphilis are not all reported as such, there is no doubt that these figures represent a true decline in the mortality and mental disease * due to syphilis.

What is the evidence regarding the amount of syphilis present in the general population? It is well known that not only are many cases undiscovered but that, of those which are diagnosed, a goodly proportion are not reported. Despite these rather serious limitations, however, much can be learned by examining the data on the reported cases of syphilis. The trend of syphilis in the total civilian population has been downward from a rate of 362.3 per 100,000 population in 1941 to an estimated rate of 197.1 for the year ending June 30, 1949.[1] It may be safely assumed that this is evidence of a true decline in the number of existing cases of syphilis of all stages in the general population, since

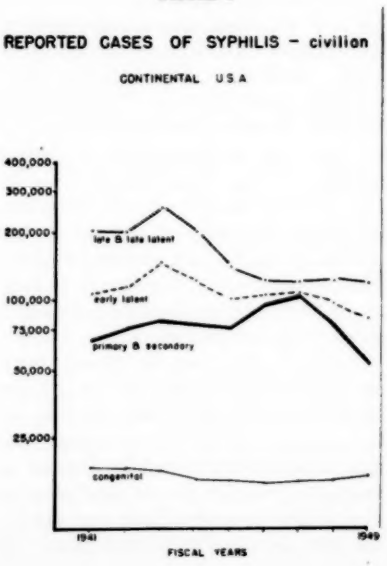
* The statistics presented on syphilitic mental disease are based on admissions to state hospitals and do not include the admissions to veterans' hospitals. Thus the data are somewhat incomplete because they do not include the cases occurring in that large group in our population which has become eligible for veterans' care in the past few years. Nevertheless it is probably fair to assume that there has been a real reduction in the occurrence of such cases.

the amount of effort in our syphilis control program has probably not been lessened significantly in the past few years.

A better measure of the syphilis problem is the number of *new* cases occurring over a given period of time. Here we are dealing with the infectious cases. This rate — the incidence or attack rate — is the guide which must be used to gauge the potential possibilities of the further spread of syphilis. What is the evidence?

Figure 1 is a graphic representation of statistics compiled by the Public Health Service showing the cases of acquired syphilis reported by states and territories — by stage of disease. First it is seen that there has been a sharp decrease in the number of cases of late and late latent syphilis reported. Second, that the number of cases of early latent syphilis reported has remained at a fairly constant level. Finally, it is noted that the number of reported cases of primary and secondary syphilis remained fairly constant until the close of the war, when it rose sharply. After this, it fell rapidly until, in the fiscal year 1949 it reached the lowest level since reporting by stage began in 1941.[1]

FIGURE 1



Before it can be safely concluded that the incidence of syphilis has been reduced in the United States, one must be satisfied that this decrease in reported cases is not due to a let-up in case finding efforts. Then too, the possibility of the private physicians treating an increasing proportion of the syphilis cases and slackening off in the reporting of their cases merits careful and direct examination. With the development of simpler and safer treatment, there are indications that the treatment of syphilis is shifting to the private physician. Certainly there would appear to be less incentive today for physicians to report their cases since they are not so urgently in need of free drugs and, in most instances, ask for no service at all from the health department in the treatment of their private patients.

Certainly this can be said — that the decrease in the reported cases of infectious syphilis, even if it represents a true decrease in the attack rate in our population, has been a much more modest one than the decrease in reported cases of late latent and late syphilis. Furthermore this decrease in the incidence rate has been in evidence for only a short period of time. These data indicate that we are now below the level of 1941 so far as the occurrence of new cases is concerned. It remains to be seen in which direction this curve will go during the next few years.

The backlog of undiagnosed late latent and late syphilis in our population has been materially exhausted, thereby reducing the size of the reservoir of disability and death. In the reservoir of syphilis infection there is another group — the undiscovered cases which perpetuate the disease. How many newly acquired cases are *not* being diagnosed and treated? It is known, on the basis of the reported cases alone, that there

are more cases being reported in the early latent stage than in primary and secondary stages. This means that over half of the infections with syphilis are being missed in the primary and secondary stages, and thus remain foci of infection for a much longer period of time. In areas where an intensive case finding program has been introduced there has been a great increase in the number of primary and secondary cases diagnosed. Clearly then, there must be much undiscovered early syphilis in the areas that do not have an aggressive case finding program.

Figure 1 shows the disquieting statistics on congenital syphilis which were recently published by the Public Health Service. Penicillin is most effective in the prevention of congenital syphilis, and yet, during the period of the widespread use of penicillin, the number of cases of congenital syphilis reported has remained constant.[1] Furthermore, only one-fourth of the congenital syphilis discovered in children of 14 years of age or younger, is being discovered in the first year of life.[2] We say that we can approach 100 per cent effectiveness in the prevention of congenital syphilis — and we can. And yet, in spite of our efforts we are confronted with the fact that we have far too many cases. This points to failure somewhere in our program. One aspect of this problem is the fact that the prenatal blood testing laws, though they have had far reaching educational effect, have not achieved as much as had been hoped, so far as the control of pregnant women with syphilis is concerned. In some areas of North Carolina, for example, we find that only 50 per cent of pregnant women are being tested — many of these at the time of delivery.

It is evident that while the extent of the problem has decreased, its *nature* has changed. The crux of today's syphilis problem is the discovery of early cases. The attack rate now needs to be used as the guiding index of the effectiveness of our control program. Modern treatment has virtually swept away the case holding problems of syphilis control. Aside from educational and other measures aimed at reducing promiscuity, the core of the syphilis control program must, therefore, lie in the diligent and persistent application of effective case finding procedures. To control the spread of syphilis, we need to increase the use of those methods which find the cases in the infectious stage.

There are three major case finding methods: contact investigation, education, and serologic screening. How shall we use them? We cannot, of course, disregard any method which finds cases. And yet, what is the requisite amount of emphasis that should be given to each of these three methods in the interests of productivity, efficiency, and economy?

The North Carolina Syphilis Studies have provided an opportunity to give careful study to this question in two contiguous health departments in North Carolina, one rural and one urban, over a number of years.[3] The results of this study are clear and definite:

1. To obtain reliable information on the relative effectiveness of the three major case finding methods in controlling the spread of syphilitic infection, attention must be directed to the origin of cases of primary and secondary syphilis.

2. Contact investigation was responsible for the discovery of 38.1 per cent of all the primary and secondary cases. This represents a group almost as large as the 42.6 per cent who came to diagnosis on their own accord.

3. There is a very significant difference between the sexes in the relative effectiveness of contact investigation and the patient's initiative. In female primary and secondary syphilis, contact investigation was by far the most effective case finding procedure, being responsible for 50.6 per cent of all such cases. In

the female primary cases, 72.2 per cent were discovered by this method alone. In the male primary and secondary cases, the educational process was the most effective case finding method as evidenced by the fact that 61.6 per cent came to diagnosis on their own initiative. In this latter group, contact investigation was responsible for only 24.4 per cent. These sex differences are shown strikingly when compared by stage of disease and are seen in both whites and Negroes.

It seems clear, therefore, that contact investigation is as important as education in the discovery of early cases of syphilis, and, furthermore, that there is an important sex difference in its effectiveness. Knowledge of this sex difference is of great value in determining priorities for contact investigation activity in the average health department which is understaffed. It means that if a choice must be made between interviewing a male or a female patient, the male should be interviewed and if a choice must be made between following up a male contact or a female contact, the female contact should be followed.

The object of education as a case finding measure is to give the public sufficient knowledge of syphilis to enable individuals to recognize a suspicious lesion or suggestive symptoms and then to motivate them to seek diagnosis and treatment. Our own studies[3] have convinced us that public education as carried on at present, though it was responsible for 42.6 per cent of all the primary and secondary cases in our series, has serious limitations as a case finding method. While it brought in 61.6 per cent of the male primary and secondary cases, it brought in only 25.3 per cent of the female primary and secondary group. This sex difference is probably due primarily to the relative inaccessibility of the female genitalia to the patient's eye. Furthermore, once a person does notice a lesion and recognizes the possibility of it being due to a venereal disease, he must be motivated to get medical attention. But, many people do not want to "know for sure." There is a natural apathy toward taking action which might bring bad news. This problem of motivation is one of the fundamental problems now facing the health education movement.

There are interesting selective factors in this apparently vague matter of attitudes. Clinicians have suspected that a urethral discharge is more likely to cause a man to seek medical attention than is the presence of a genital sore. A recently published study supports this.[4] In a series of 1,289 Negro males with gonorrhea, it was found that 91.3 per cent came to diagnosis on their own initiative. This is to be compared with the fact that in a series of 229 Negro males with primary syphilitic lesions, only 63.3 per cent came to diagnosis on their own initiative.[3] Such information is valuable in planning the specific aspects of an educational program.

Studies in the Eastern Health District of Baltimore have demonstrated that, in recent years, a sizable proportion of the discovered cases of early syphilis were reinfections and relapses.[5] In 1948, for example, those cases formed 22.5 per cent of the early cases found among Negroes. In a recent study of 142 cases of infectious syphilis, due either to relapse or reinfection, with lesions visible to the patient, which occurred in patients who had received previous treatment for syphilis, it was found that 92.2 per cent had been previously treated in the armed services, in rapid treatment centers, or in health department clinics.[6] These agencies have specially designed patient-education programs which stress the recognition of syphilitic lesions and the need for immediate diagnosis of suspicious lesions. It would then be expected that the majority of the cases studied would have come to diagnosis on their own initiative

Training Future Sanitary Engineers in Engineering Colleges*

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THE training, professional qualifications, and functional need for sanitary engineers is given current interest and emphasis by the several reports prepared by committees representing national associations and societies; each having a mutual interest in this subject, but a slightly divergent approach.

The reports made by the Committee on Professional Education of the American Public Health Association, by the American Society for Engineering Education, and by the American Society of Civil Engineers, through committees appointed to study sanitary engineering training objectives and the more effective utilization of persons so trained, provide the basis for this discussion.

Each report by itself is an attempt to provide an answer to that part of the overall problem which relates to the scope and function of the organization represented by the committee in question. When viewed together, the divergent approaches presented by the individual reports give a composite picture with the perspective necessary for a clear comprehension of the overall problem.

Stimulated by the developing need in the mid-1930's to establish specifications which would outline the qualifications of public health personnel employed, or to be employed, under a merit system by local or state public health agencies, supported in whole or in part by federal funds, this Association, through its Committee on Professional Education, attempted to envision the qualifications of the personnel that would be needed in an expanded public health program and to express these qualifications in the form of minimum experience requirements or training standards regarded as necessary to insure competency in the several recognized professional groups engaged in public health work.

Originally formulated in a report published in the Association *Journal* of March, 1937, and subsequently republished in the *Journal* in revised form in January, 1947, the Committee on Professional Education provided this Association with a comprehensive statement covering the Educational Qualifications of Public Health Engineers.

This report identifies the public health engineer as "a sanitary engineer, employed by a public health agency, who is trained in methods for the control and proper use of factors of the environment to the end that the public health is improved or protected." It first underscores the importance of basic engineering training by stating that "The true value of the public health engineer rests squarely upon his ability within his pro-

* Presented at a Joint Session of the Conference of Municipal Public Health Engineers, the Conference of State Sanitary Engineers, and the Engineering Section of the American Public Health Association at the Seventy-seventh Annual Meeting in New York, N. Y., October 25, 1949.

fessional field." It then proceeds to outline in some detail the subject matter that should be covered in a study program in sanitary engineering and public health practice — presumably to be completed within a period of one year of graduate study. From an academic viewpoint, it appears that the committee, intent upon its assigned objective — that of specifying the educational qualifications for the public health engineer — has given us a rather detailed outline of the sanitary science courses which should be included in the training program with the general admonition that emphasis be placed upon fundamental scientific engineering and public health content of the subject matter presented, but without clearly indicating the applied engineering courses which should be presented with a background of sanitary science.

Since scientific engineering is basically the application of the principles of physical sciences to economical solutions of situations that relate to the physical environment of man, it is suggested that the committee might have increased the value of the report by including a clearer definition of the specific public health problems which require the application of engineering knowledge for their solution. The functional need for trained engineers has been clearly defined in many fields by presenting the unsolved problems which require the combined application of science and technology in effecting their solution. It is suggested that, before determining the content of a training program, there is a need to define clearly the functional use of qualified sanitary engineers in the public health field by outlining the problems which require the application of engineering principles in effecting their solution. The cataloguing of academic subject matter to be included in a study program requires a clear comprehension of training objectives.

The technological ability to conceive, design, and build the many facilities needed for the protection and promotion of the public health does not result from a mere knowledge of sanitary science, but rather from a capacity to combine this knowledge effectively with that of the other physical sciences in the development of the methods and procedures necessary for the solution of problems which relate to the economical change or control of those physical factors in the environment adversely affecting the public health. Training in those sciences essential and basic to the special field of sanitary engineering must therefore supplement rather than replace instruction in other science subjects, basic to a general engineering education.

A review of the problems usually allocated to the engineering member of the staff of a public health department quickly discloses the importance of nontechnical training and personality attributes, without which the most perfectly trained sanitary engineer would be an ineffective public health worker. The Committee on Professional Education recognized the importance of personal qualities in the following brief but important statement: "To attain success in full measure, public health engineers should not only be competent in their field of learning and practice but should also be able to establish and maintain favorable relations in their own department and with the public on the basis of creative ability, far-sighted leadership, sound engineering judgment, common sense, honesty, and industry."

While we may recognize many of these personal qualities as necessary for success in any field, the public character of health work makes these attributes of such importance that they require consideration on the same basis as professional and technical qualifications. These attributes of personality and character develop slowly, and, frequently a few years of professional experience will be needed to develop or

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While we may recognize many of these personal qualities as necessary for success in any field, the public character of health work makes these attributes of such importance that they require consideration on the same basis as professional and technical qualifications. These attributes of personality and character develop slowly, and, frequently a few years of professional experience will be needed to develop or

disclose the lack of an individual's ability to undertake responsibilities as an effective employee of a health department.

While specialized training for a specific type of position is a very effective method of instruction, it increases the hazard of technically qualifying persons to fill narrow specialized positions which may require personality qualifications not insured by this training. This type of instruction is best adapted for the in-service training of previously selected personnel, known to possess those attributes that are not obtained through technical training. Training objectives need to be kept broad if our educational institutions are to avoid the human tragedy and social loss which result when a student is directed into a narrow field of specialization which fails to provide anticipated job opportunities.

The basic educational philosophy underlying the organization of curricula in the schools and colleges of engineering has long been the subject of critical study by the American Society for Engineering Education (formerly the Society for the Promotion of Engineering Education). Educators have coöperated with the professional societies serving the several major fields of engineering and, through the jointly supported Engineering Council for Professional Development, have made much progress in determining the training requirements in the major fields of engineering.

Professional limitations imposed by early specialization are being avoided and an increased amount of time is devoted to thorough training in the sciences which provide the basis for sound technological progress. In order that engineers may have a clearer appreciation of the problems of modern society and be better qualified to provide professional coöperation and assistance in finding solutions, there is a trend to include more non-technical so-called "humanistic-social" studies in engineering curricula. Approximately 20 per cent of the average engineering curriculum is now devoted to these non-technical studies. This type of training is especially necessary for engineers whose professional activity will be such as to require frequent public contact.

In an attempt to relate training objectives to curriculum content, the sanitary engineering committee of the American Society for Engineering Education in its report presented at the Society's annual meeting in June, 1949, made its recommendations on the basis of the definition of a sanitary engineer as approved by the National Research Council. This definition of the sanitary engineer and his functional field is as follows:

> "The professional occupational title 'Sanitary Engineer' shall apply to a graduate of a full 4 year, or longer, course leading to a Bachelor's degree, or higher degree at a college or university of recognized standing with major study in engineering, who has fitted himself by suitable specialized training, study and experience (a) to conceive, design, direct, and manage engineering works and projects developed, as a whole, or in part, for the protection and promotion of the public health, and (b) to investigate and correct engineering works and projects that are capable of injury to the public health by being or becoming faulty in conception, design, direction or management."

The committee report, recognizing that programs of sanitary engineering activity will be carried forward by many agencies both public and private, suggests the following general classification of sanitary engineering practice.

1. DESIGN AND CONSTRUCTION. Much of this work will be done by consulting engineers, although large corporations, water departments, sewerage divisions or large cities, and city engineers may engage in this work. Some state engineers will do design work for state institutions, etc.

2. OPERATION. This includes water sewage and industrial waste disposal plant operation primarily, and at present would not usually include small plants.

3. PUBLIC HEALTH ENGINEERING. This includes all sanitation control sponsored, promulgated, initiated or conducted by public and private health agencies.

4. INDUSTRIAL HYGIENE ENGINEERING. This includes the specialized operations concerning the engineering control of industrial environment engaged in by official agencies and industrial concerns. It may include atmospheric pollution problems. Occasionally the term "industrial sanitary engineering" has been used for this work.

Basic training in sanitary engineering should be a preparation for professional work in the many fields of employment which require this specialization. Many of the changes and improvements in the physical facilities that provide us with a safe and sanitary environment are and will continue to be accomplished through public and private agencies, organized to achieve a functional objective distinctly separate from that of a health department. Sanitary engineers employed by these agencies often have equal and sometimes greater opportunity to apply their professional knowledge in the advancement of public health standards — as compared to the opportunities available to the engineer employed in an administrative capacity in a health department.

The A.S.E.E. Committee was not of the opinion that an undergraduate 4 year curriculum leading to a degree in the narrower and more specialized field of sanitary engineering was desirable concluding that:

"If sufficient specialized work is given to justify a separate curriculum, then other essential courses must be omitted, resulting in an engineering foundation that is too narrow and specialized, and which would handicap the graduate if he ever tried to work in any other field of engineering. The committee recognizes that there may be exceptions to the above, but it should be emphasized that sound training in basic fundamentals of engineering should never be sacrificed."

The report suggests that, while no single undergraduate path to sanitary engineering is indicated, the civil engineering undergraduate option, when properly grounded in bacteriology, biology, and chemistry, would appear to be the most desirable path toward a well rounded sanitary engineering education. It recognizes, however, that some engineers with basic training in mechanical and chemical engineering may be expected to take advanced training and enter the field of sanitary engineering, especially in industrial hygiene and in process control or operation.

After a review of the duties and responsibilities in the field of sanitary engineering, the A.S.E.E. Committee expressed the opinion that, in addition to the training in mathematics, chemistry, and physics fundamental to all engineering, the basic science instruction for the sanitary engineer should include the following subjects:

1. Surveying, including work in topographic surveying and mapping.
2. A basic knowledge of elementary structures, equal in content to that required in an approved civil engineering curriculum.
3. A basic knowledge of fluid mechanics and hydraulics.
4. A general course in geology to be followed by a course in soil mechanics.
5. An elementary course in electrical engineering with emphasis on application rather than design.
6. In mechanical engineering a basic course in thermodynamics and heat engines.
7. Courses in engineering law, contracts and specifications, economics and public administration.
8. A course in applied statistics.

When the student follows the civil engineering path to a graduate program in sanitary engineering, it will be found that these basic subjects will usually be included in any E.C.P.D. approved program.

Programs of special training in sanitary engineering were originally undergraduate options in civil engineering but, as the 4 year curricula have become crowded with courses regarded as basic to all specialized fields of engineering practice, the need to use a 5th year for

specialization has become increasingly evident. It is anticipated that the undergraduate option in sanitary engineering will remain but that the subject matter presented will be limited to basic instruction in bacteriology, chemistry, and the beginning applied engineering courses in general sanitation, water supply, and sewerage.

In the report of the American Society of Civil Engineers Committee on Advancement of Sanitary Engineering, to which reference has been made, and under the topic of "Trends in Sanitary Engineering Education" the following statement appears:

"The programs of instruction and research in sanitary engineering that are based on a first degree in civil engineering attempt to offset the primary deficiencies of the civil engineering curriculum by including instruction in bacteriology, parasitology, and chemistry. Some criticism is directed against this practice because of the elementary nature of the subject matter dealt with in comparison with the subject matter based on the engineering sciences that are included in undergraduate civil engineering programs. Two alternatives are being explored to raise all graduate instruction in sanitary engineering subjects to a more obviously advanced level: (a) The inclusion of needed preparation in the elementary biological and chemical sciences in the undergraduate program of civil engineering; and (b) the requirement that prospective students make up deficiencies before beginning graduate work — for example, by a summer of intensive instruction offered specifically for this purpose.

"Although the expansion of instruction in sanitary engineering is traceable to the needs of public health departments, most programs of instruction in sanitary engineering are formulated about engineering subjects rather than about public health subjects for two reasons: (a) Adequate knowledge of essential engineering subjects cannot be acquired without effective guidance and laboratory work, whereas the limited number of public health subjects that are of importance to engineers are readily acquired by self-study; and (b) programs in sanitary engineering are intended for students who may wish to plan, design, construct, and operate sanitary works, as well as for students who are to take part in the administrative control over such works through governmental health agencies."

The A.S.E.E. Committee report, recognizing that engineers graduating with the B.S. degree may wish to enter the 5th or graduate year without basic undergraduate work in chemistry, bacteriology, and biology, suggests that "Where these courses are presented objectively to meet the needs of the engineer and at graduate concentration level, it is proper that graduate credit be allowed."

The subject matter to be covered in this 5th or graduate year in the specialized field of sanitary engineering has been generally outlined by both the A.P.H.A. Committee on Professional Education and by the A.S.E.E. committee. These outlines are quite similar and include, in addition to training in basic biology and chemistry, a presentation of engineering technology covering — according to the A.P.H.A. report:

"The principles and practices of engineering analysis, design and operation as applied to works and projects for the protection and promotion of the public health including (but not limited to) the following: water supply and purification, sewerage and sewage treatment, the collection and disposal of municipal, rural, and industrial wastes; projects for the control of insect, rodent, and other vectors of disease transmission; the engineering and administrative phases of food and milk sanitation; the sanitation of buildings including ventilation, air conditioning, heating, plumbing, and illumination; housing; industrial sanitation with particular reference to those industrial health hazards the correction of which is largely an engineering problem."

In addition to this engineering instruction, both committees expressed the opinion that the sanitary engineering program should include a course or courses that would provide an introduction to the following public health subjects:

a. Epidemiology
b. Vital statistics
c. Public health administration
d. Environmental sanitation, including refuse and garbage disposal, rural water supply and excreta disposal, school and camp sanitation, swimming pools, food and milk control

e. Entomology and parasitology, including malaria and mosquito control.

For students who are completing sanitary engineering training and who are interested in possible employment in the field of public health, the report suggests the inclusion of additional courses in public health.

The A.S.E.E. Committee report expresses the opinion that in the 5th year of study it should be possible for a student to complete a minimum program of specialized instruction in sanitary engineering with some concentration in one of its several subdivisions. The report carries the recommendation that the degree granted upon the completion of this program should be Master of Science in Sanitary Engineering. The report notes that the degree of Master of Public Health may be indicated for those who wish to limit their training to this field, but recognizes that the sanitary engineer, like others in professional groups in public health, should first complete the basic training that gives him special qualification for employment in this field, and suggests that "In most cases, this degree should not be obtained in lieu of a master's degree in sanitary engineering, but should be regarded as a specialized training in public health techniques for professionally qualified personnel. The requirements for such a degree are fixed by schools of public health, and the program of study would be a desirable climax to the training program by rounding out the man's knowledge in biometry, epidemiology, bacteriology, public health administration, and specialty courses such as industrial hygiene, that engineers may require."

It may be anticipated that the sanitary engineer who enters the public health field in the future will share responsibility in the field of sanitation with other, non-engineering, but well trained and qualified personnel. In many public health organizations in the near past, it has been necessary that the engineer perform many non-engineering duties. Because he did them well, there has been a tendency on the part of administrators to specify the continued use of engineers in positions that require a knowledge of sanitary science but do not require the application of engineering principles. The permanent employment of engineers in positions that do not provide opportunities for professional advancement in engineering raises some doubt as to whether some positions, so classified, are in fact engineering positions.

While engineering personnel will continue to be recruited for positions that give little opportunity for the exercise of engineering skill and judgment, it is important that the training objectives for future sanitary engineers be maintained at a professional level that will insure the availability of personnel qualified to carry forward the programs of research and development that are basic to progress in this field.

CONCLUSION

In conclusion, it appears that the reports of committees representing the field of public health, professional engineering, and education are in substantial agreement with regard to the type of training that should be provided for the sanitary engineer in the future. They recognize that he must be prepared to cope with problems which are both complex and complicated and that his training must develop both technical competence and leadership capacity.

The hazards of narrow specialization are recognized and the importance of basic training in one of the major branches of engineering is clearly indicated. While some work in sanitary engineering may be included in the undergraduate civil engineering program, a year of graduate study devoted to the special sciences and technology of sani-

tary engineering is regarded as necessary preparation for employment in the many fields that require the services of trained and competent engineering personnel. I close with a quotation from the A.S.C.E. report:

"No prediction can be made with regard to how the sanitary engineer of the future will measure up to the responsibilities that will be his, not by any right imposed on him by a fiat act of government but rather by the more basic right, that of being the best qualified person available to provide a needed service."

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Mental Hygiene and Public Health

Mental Hygiene as a part of Health Department services has been recommended in a report made to the New York City Health Department following a three month study by Jules V. Coleman, M.D., director of psychiatric outpatient service of the University of Colorado Medical Center. The basic recommendation is that the Department of Health should concern itself with the emotional and personality problems of the average person served by the department rather than with treatment in specialized clinics of the occasional patient with neurotic or psychotic disorders.

The Health Commissioner, John F. Mahoney, M.D., in releasing the report, indicated that its concepts have been accepted by the department as a sound policy which will be put into effect as rapidly as possible. This will mean participation by psychiatrists in the department's activities, chiefly for the purpose of helping clinical and other personnel to a better understanding of their patients and thus to more effective handling of patients' problems. It was recommended that at least half the effort of the mental hygiene program be devoted to the child health services. The department has 74 child health stations serving about 100,000 infants and preschool children.

Proposed Report on Educational Qualifications of Public Health Statisticians*†

I. In General—Since 1938 when the preceding report on "Educational Qualifications of Public Health Statisticians"[1] was prepared, there has been a marked expansion in the scope of organized public health work. New activities have been and are being added to the functions of state and local health agencies especially, and their traditional activities are being modified to accord with progress in the health sciences. In the face of these changes, the administrator of health agencies finds it necessary to evaluate continuously the effectiveness of his programs in meeting community needs. The administrator of state and local agencies is responsible to the people for planning the activities of the health department to solve the community's health problems; the parallel task of measuring the efficiency of the operation of the program and the efficacy of the program in achieving its objectives falls upon the statistician. The experience of the last decade has shown that only with proper statistical guidance can the administrator adequately appraise his programs and revise them to meet changing conditions.

There are approximately 400 professional workers in this country whose main interest is in the field of public health statistics. The demand for competent and qualified public health statisticians exceeds the supply. This is particularly true in the case of those federal agencies which have substantial health activities, as the U. S. Public Health Service, the Children's Bureau, the Defense Establishment, etc. In the federal agencies, the position of the public health statistician is well established and described by U. S. Civil Service regulations; he can reach all grades from the lowest to the highest in the Civil Service classification. If there is further expansion of federal health programs in the future, the demand for statisticians by the federal government will become even greater.

Public health statisticians are also employed by several of the larger Foundations, by voluntary health agencies, and by insurance firms, and other industrial enterprises with interest in health problems.

Many statisticians are employed in state and local health departments, and in these agencies the demand is greater than the supply. The expected increase in the number of full-time health units will undoubtedly maintain for some time the level of demand above that of supply.

However, recent findings indicate that statistical workers now employed in state and local health departments have widely divergent qualifications, and responsibilities which bear little relation to their qualifications. The duties of

* The Committee on Professional Education of the American Public Health Association publishes this report before transmittal to the Governing Council in order to permit the members and Fellows of the Association to review it and to offer criticisms and suggestions in the further consideration of the report.

This report, like all other statements of the committee on professional and technical qualifications in public health, is subject to periodic revision in order that it may be kept abreast of the best thought.

† This proposed report is a revision of the Report on the Educational Qualifications of Public Health Statisticians approved by the Governing Council on October 25, 1938.

these personnel range from those of a clerical grade to chiefs of statistical organizations employing large numbers of professional statisticians. As has been pointed out by the Committee on Professional Standards and Remuneration of the Statistics Section of the Association in its last report [2] and in an earlier paper by Swinney on "Statistical Activities in State Health Departments," [3] the standards suggested in the 1938 Report of the Committee on Professional Education are not being met. This seems to have been due to a lack of appreciation of the contributions which adequate statistical assistance can make to the total program of a health department. As a consequence, few health departments have provided salaries sufficient to attract individuals with the qualifications set forth in the report. The existence of this situation makes it necessary to redefine the job of the public health statistician with particular reference to health departments; to restate the requirements on training and education background for such workers; and to provide health administrators with a clearer concept of the functions to be carried out by public health statisticians.

II. OBJECTIVES AND SCOPE OF PUBLIC HEALTH STATISTICS—The growing importance of statistics in health departments is a direct consequence of the increasing complexity of the activities of these agencies. When their major problems concerned primarily acute diseases of high incidence or prevalence, the function of the statistician was limited to the computation of relatively crude health indices—death rates and morbidity rates based on records collected routinely, such as death certificates and physicians' reports of communicable diseases.

With the conquest of the major communicable diseases and the extension of health department work into other fields such as chronic disease control, hospitalization, and medical care, the need has arisen for adequate statistical analysis to define problems, to develop plans, to evaluate programs. In most instances, accurate indices for this analysis cannot be secured from routine data but require special studies designed to collect specific factual information. Thus, the functions of the statistical organization of a health department, while continuing as in the past to include the routine collection of mortality and communicable disease statistics, are evolving so as to include responsibility for planning and conducting studies which will guide the health administrator in developing effective programs to meet new problems. These new problems often involve complex relationships of health with general social, and biological factors. The study and solution of these problems demand quantitative knowledge of the social, economic, and biological aspects of the community as well as proficiency in statistical methods. In addition, the combined and continued efforts of the administrator, the statistician, and other members of the health department team are needed from the very start of the planning stages to the development and operation of the full program.

Summing up, the expansion of state and local public health activities requires that public health statistics be concerned with all data relating to the operations of a public health agency. These data pertain to births and deaths, population, notifiable diseases, morbidity surveys, environmental studies, epidemiological investigations, clinical examination and treatment, field follow-up contacts, personnel performance, etc. In the collection and analysis of these data, the primary functions of the public health statistician should be (1) definition of the health problems of an area in quantitative terms, (2) development of records and analytical procedures for the

administration of programs designed to meet these problems, and (3) evaluation of the effects of the programs.

The preceding discussion indicates that the scope of the statistical field in public health is as broad as the program of the health department itself. This has an important implication with regard to the desirable education and other qualifications of workers in this field, since the statisticians must have a broad overall understanding of the field of public health as well as knowledge of statistics.

III. CLASSIFICATION OF PUBLIC HEALTH STATISTICIANS—Statistics has been defined as a scientific system or method for the collection, compilation, description, organization, analysis, interpretation, and presentation of data. It is the thorough knowledge of this scientific system, of the theory and techniques of statistics, that characterizes the statistician.

The professional statistician is to be distinguished from the many non-professional or clerical persons engaged in statistical work. The distinguishing features are: (1) knowledge of the theory and methods of statistics, (2) the professional nature of duties, which include responsibility for initiating and modifying procedures for the collection processing, and analysis of data, and for selecting statistical techniques to be employed.

In the federal agencies public health statistics represents a special branch of the field of statistics. The Civil Service classification of statisticians is similar to that of all professional personnel. The functions vary with the grade and this in turn is based on knowledge, experience, and administrative responsibility. There are public health statisticians attached to bureaus, branches, divisions in all capacities. Their work includes one or more phases of statistical operations from the collection of data and their analysis, to the development of methodology. They participate in investigations on specific health problems or analyze data regarding programs and plans of the unit to which they are attached. The public health statisticians employed by Foundations, voluntary health agencies, and industrial organizations in general serve in the capacity of analysts of data in specific fields and as consultants on research projects.

In health departments, professional statisticians may be considered in one of two categories depending on whether their primary function is the registration of vital records or the analysis and interpretation of statistical findings. Historically, registration has been the principal responsibility of the statistical organization of a health department, and in many areas it remains so today. However, the growing importance of statistical analysis in the planning and conduct of health programs has increased the need for analytical functions to be added to the responsibility for registration.

The classification outlined below attempts to describe the situation existing in a composite of state and local health departments throughout the country. It is recognized that classifications may vary in individual health departments. In some, for example, the functions of the registrar and chief statistician may be combined; in others, statisticians may have other titles, such as, public health analysts, etc.

The Registrar or chief of a statistical unit engaged primarily in the registration of births and deaths is responsible for the formulation of policy in relation to registration matters and at times for analysis of vital statistics, but is not engaged in analysis of statistics relative to health department activities as a whole. The registrar is a worker in the statistical field who has specialized in the technical and mechanical procedures

involved in the collection and compilation of birth, death, and other health records and the maintenance of such files and registers as are required for the continuous identification of individuals. His work provides the basic vital statistics for the study of public health problems.

The Statistician. In some health departments statistical activities are increasing to such an extent that the positions in the statistician category include

1. Chief Statistician or Director of Statistical Organization
2. Senior Statistician
3. Junior Statistician

It is not intended to suggest that each health department has all these groups or that statistical positions be confined only to these groups. However, since these groups occur frequently it is felt that a statement of the functions, responsibilities, and educational requirements of these positions will serve as a guide to health departments in general, whether they have fewer or more classes of professional statistical workers.

Chief Statistician or Director of the Statistical Organization is the chief of a statistical unit engaged primarily in analytical work in coöperation with other units of the health department. He may or may not have responsibility for registration of vital records. He is responsible for the development of a statistical program to meet the needs of the health department from the planning stage through the final analysis and presentation of results. He exercises considerable independence of action within the broad policies laid down by the administrator.

Depending upon the size and complexity of the organization, the chief will be assisted by subordinate professional personnel who exercise a greater or lesser degree of independence in planning statistical studies, collecting data related to specific problems, supervising tabulations, analyzing data, and presenting results. All statistical activities of a health department should be under the professional direction of the chief statistician, although some of the statistical personnel may be administratively assigned to work in another health department unit. In other words, budgetary and administrative considerations may require flexibility in the pattern of the department's statistical organization, hence in a given instance subordinate statistical personnel may report administratively to someone other than the director of the statistical organization. Nevertheless, their chief in the professional sense should be the director of the statistical organization. Otherwise it will be difficult to assure that the overall statistical program of the health department is well coördinated and integrated.

The classification of these subordinate personnel will depend on the size and pattern of the statistical organization and will be based on the level of responsibility required in the execution of their duties. The duties of two types may be described as follows.

Senior Statistician.

Individuals in this class are responsible under the general supervision of the chief statistician for analysis requiring a high order of technical competence and demanding a good general knowledge of public health. They may consult with division chiefs and other personnel of the health department with regard to planning studies, collecting data, and tabulating and analyzing results. Under general supervision only, they may initiate studies and exercise considerable independence of action within broad policy lines laid down by the chief of the statistical organization. Their analytical work should not be confined to one particular aspect of public health.

Junior Statistician.

Individuals in this class are usually under the immediate and fairly close supervision of

a senior statistician or equivalent. They may supervise a small clerical or tabulating force or be responsible for some tabulating work. They may conduct simple analytical studies and be responsible for the preparation of routine statistical reports.

IV. GENERAL EDUCATIONAL BACKGROUND—In order that the statistician can contribute effectively to the work of the public health team, and be able to plan, direct, and interpret the statistical activities essential to the work of the health administrator, the epidemiologist, the clinician, the laboratory man, the sanitary engineer, and other members of the health team, he must acquire sufficient knowledge of the principles underlying their operations. He must understand the purposes and scope of the several kinds of health programs; he must understand the concepts of disease, causation and spread of disease, and control through sanitation, immunization, education, and other organized community efforts. In brief, the statistician must be able to appreciate the problems of all the members of the health team and should be able to be imaginative about the statistical needs of all phases of their programs—formulation, conduct, and evaluation. The broad scope of the activities of the public health statistician requires that he possess, in addition to statistical training, a sound foundation in the sciences basic to public health and a thorough knowledge of the subject matter of public health itself. The following recommendations are based on these considerations.

The educational requirements for public health statisticians are the same whether they are employed by state or local health agencies, the federal government, or voluntary agencies. The undergraduate requirement is similar to that for any phase of professional work in public health. Undergraduate work should not be thought of as the period in which specialization is to be pursued but rather the period in which the foundations for such specialization are laid. To this end a broad cultural background should be acquired with courses in all the following four major fields: (1) Mathematics, (2) Physical Sciences, (3) Biological Sciences, and (4) Social Sciences. A course in elementary statistics should be included, but it may be taken in conjunction with any one of a number of major fields. Other subjects such as English, history, philosophy, etc., are also desirable to broaden a student's background. One cannot emphasize too much the importance of English, especially courses in exposition. The statistician should be prepared to present and interpret health statistics to the public in an interesting and informative manner and to prepare technical reports, papers, and expository articles so as to make the results of statistical studies understandable to nontechnical readers.

An individual with such academic training should be considered an acceptable applicant for the lowest or entry classification of positions in public health statistics. Such academic training is also sufficient for appointment as statistician for local health units, provided the statistical program has the benefit of guidance from the state health department's statistical organization or other sources.

V. PROFESSIONAL GRADUATE STUDY—Graduate study in schools of public health accredited by the American Public Health Association is a prerequisite for career advancement in the field of public health statistics and for the ability to assume responsibility in the effective planning of statistical programs of the health department. The graduate work should be designed to lead to a master's or doctor's degree in which the major field of study is statistics. The master's degree requires one to two years of study after the bachelor's degree while

the doctor's may take an additional two years.

Basic medical sciences. In view of the fact that man, normal and abnormal, is the center of interest in public health statistics, the public health statistician should possess a "working knowledge" of the normal structure, function and behavior of the human being and of the morbid processes which affect him. It is therefore recommended that the professional, educational, and training program of study for public health statisticians include substantial courses in anatomy, physiology, and pathology.

Basic public health courses. The effective application of statistics to the field of public health requires knowledge of the theory and practice of the various health disciplines which comprise the field. The public health statistician consequently must supplement his training with courses in the public health science. These courses should include at least epidemiology, public health administration, microbiology, and environmental hygiene and, if possible, also, industrial hygiene, medical care, and hospital administration.

Statistics. Training in statistics should include courses in statistical theory and the application of the theory to various fields of public health. Courses vary in different schools, but the general content of the curriculums of schools of public health is more or less uniform and satisfactory. It is essential that in these courses great emphasis should be placed on the reasoning process involved in the statistical approach to public health problems. The most effective way for a student to grasp this reasoning process is by practice and application in the statistical laboratory.[4] Further, it is recommended that the academic instruction be supplemented by supervised practical work in the statistical organization of a well organized public health agency.

The following are the existing schools of public health currently accredited by the American Public Health Association:

1. University of California School of Public Health
2. Columbia University School of Public Health
3. Harvard University School of Public Health
4. The Johns Hopkins University School of Hygiene and Public Health
5. University of Michigan School of Public Health
6. University of Minnesota School of Public Health
7. University of Pittsburgh Graduate School of Public Health
8. University of North Carolina School of Public Health
9. University of Toronto School of Hygiene
10. Tulane University School of Medicine, Department of Public Health
11. Yale University School of Medicine, Department of Public Health

VI. PERSONAL QUALITIES—As for all professional workers in every field of endeavor, the public health statistician must be able to deal effectively with people and to present ideas clearly and logically. He must possess integrity, initiative, and a willingness to undertake the solution of difficult problems.

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Premature Birth Research Program

The greatest single cause of infant mortality, premature birth, will be attacked through two research projects supported by the Playtex Park Research Institute. Samuel Z. Levine, M.D., professor of pediatrics, Cornell University Medical College, will study the relationship of adrenal hormones to aromatic amino acid metabolism in premature infants, introducing the recently discovered ACTH hormone and cortisone in his work.

Richard L. Day, M.D., associate professor of pediatrics at the Columbia University College of Physicians and Surgeons, will attempt to evaluate the part played by hormones in the instability of premature infants and the function of the adrenal glands in prematures.

The Playtex Research Institute was established in September, 1949, by the International Latex Corporation. It had previously made available funds to 10 medical schools in support of 12 research programs in infants' and children's diseases and disorders including mental retardation, allergy, infant diarrhea, growth factors, endocrine abnormalities, adrenal hormones and infection, and emotional factors in children's diseases.

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THE STATUS OF VENEREAL DISEASE CONTROL

A PAPER, by Dr. J. J. Wright and C. G. Sheps, presented in this issue of the *Journal* calls attention to the challenging problems of venereal disease control; and an admirable review of the program in the United States has been presented by the Syphilis Study Commission of the WHO.[1] The statistics of the U. S. Public Health Service clearly indicate a substantial decrease in reported cases of late and late latent syphilis since a peak in 1943 and of primary and secondary syphilis since a peak in 1947. In considering these morbidity figures, however, it must be remembered that these are reported cases only. There remain, in the United States, areas where case finding and reporting systems are far from ideal, and where venereal disease continues undiscovered or unreported, or both. As an example, a special case finding project in an unorganized county in Mississippi recently produced an increase of more than 100 per cent over the previous year of open-lesion syphilis cases found and brought to treatment. Studies such as these demonstrate the need for extension of integrated health facilities into areas which serve as reservoirs of infection and of potential public disability cases.

There is a strong possibility that undiscovered and unreported cases of syphilis are partially responsible for the too-constant level of congenital syphilis morbidity over the past five and a half years, in spite of the widespread use of penicillin as the most effective treatment yet utilized for syphilis in pregnancy. To the extent that pregnant women are treated, we should expect the number of babies born with syphilis to decrease; and, moreover, if there is a reduction in the incidence of syphilis, we should expect fewer pregnant women to be infected with syphilis. Every case of congenital syphilis is a failure of syphilis control, and this is especially true when it is not detected until the elementary school or high school years. Only 26 per cent of the congenital syphilis discovered in children 14 years of age or younger is being discovered before the first year of life. This rate of early discovery is not good enough, in view of the severity of the late complications of congenital syphilis and their resistance to treatment. Women with latent syphilis and the children born to these women are too frequently overlooked,

especially in rural areas of high prevalence where medical facilities are not readily available. Blood testing during pregnancy, careful follow-up of treated mothers and their children, and screening examinations of school children at an early age—these are the factors which will assist materially in reducing the incidence and severity of congenital syphilis, and in finding and bringing to treatment those cases which heretofore have been undiscovered.

Heeren [2] has pointed out that in Iowa mortality rates from syphilis and admissions to mental institutions with psychoses due to syphilis have decreased by nearly 40 per cent since 1936; on the other hand, however, "based on the results of serologic testing of persons marrying and women having babies, there has been no obvious decline in the prevalence of syphilis over the past seven years. Thus, the reservoir of syphilis remains with us, and we must continue our case finding and treatment program at an undiminished pace in order to retain the gains we have made."

Dr. John H. Stokes [3] presented last winter an extraordinarily challenging analysis of this whole subject which should be read by the health officer as well as by the specialist in venereal disease. He notes that the antibiotics have provided "almost ideally safe, reactionless and increasingly inexpensive treatment for syphilis, gonorrhea, chancroid, and granuloma inguinale," treatment "so rapid that its duration is a matter of hours and (at most) days." Yet he warns us that this great advance in simple and effective treatment has "abolished patient education in course, hampered contact tracing, weakened follow-up"; and that it has made "almost immediate reinfection a commonplace." He notes that these simplifications have "returned the management of venereal disease to the practitioner if not to the patient himself" and adds that "effective self-treatment is just over the horizon."

Whatever we may think of self-treatment, the greater possibilities of treatment of syphilis by the private practitioner must be welcomed. Yet this inevitably complicates the task of epidemiological control. Dr. Stokes suggests that the physician in his office can scarcely be expected to conduct contact tracing or to call the state in to do so; that he cannot make "adequate examination of women once in a hundred times"; that he cannot be expected to obtain routine darkfield examinations or smear or culture reports before instituting treatment; that he cannot make an adequate diagnosis of sero-negative primary syphilis or interpret nonspecific or biologic false-positive tests.

Dr. Stokes suggests that some of the difficulties in early recognition might be overcome by the use of "a rational, practical simultaneous treatment of gonorrhea and syphilis in the incubation period, which can also be applied both to manifest infections and to contacts or suspicion"; and outlines the conditions which might indicate such treatment.

We part company with Dr. Stokes when he suggests that we may be in danger of putting prompt treatment of syphilis "in the position of subsidizing venery" and that effective medical care of venereal disease "may inaugurate a world of accepted, universalized safeguarded promiscuity." No such crude alternative as this need be accepted. It is clearly the duty of the health educator to continue the most effective possible campaign on behalf of healthy living, and promiscuity is unhealthy, emotionally and socially, even if the spirochete and other organisms do not make it physically hazardous. Furthermore, the health department can today enlist the resources of psychiatry in the study of promiscuity, as has been done with notable effect in Chicago [4] and San Francisco.[5] At the same time, it

is the task of the venereal disease officer to reduce the volume of community infection, without accepting the conclusion that the spirochetes are necessary and essential guardians of morality.

The leaders of the venereal disease control program must give serious thought to the improvement of early detection of venereal diseases from the standpoint of case finding, of laboratory service and of early and accurate diagnosis; and the health administrator must not be lulled by the decrease of reported cases of syphilis into a false sense of security.

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3. *J. Ven. Dis. Inform.* 31:1 (Jan.), 1950.
4. *A.J.P.H.* 39:1535 (Dec.), 1949.
5. *Health News.* New York State Department of Health 26, 8:3 (Aug.), 1949.

NITRATES IN WELL WATER AND METHEMOGLOBINEMIA IN INFANTS

THE Committee on Sanitary Engineering and Environment of the National Research Council [1] has recently issued a memorandum (by K. F. Maxcy) on the problem of methemoglobinemia in infants and its relation to nitrates in well waters, which is of interest and importance.

This problem was first raised by Comly of Iowa five years ago.[2] Subsequent studies have established beyond question the fact that a serious disease of infants is characterized by the presence in the blood of methemoglobin which in its formation has absorbed and continues to hold the oxygen of the blood so that this oxygen is not available to function in respiration; and that this disease is directly related to a high content of nitrates in certain well waters. These nitrates are not harmful in themselves. They produce disease only when reduced to nitrites in the intestine; and the intestinal bacteria which cause this reduction work only at a very high pH value. This reduction to nitrites seems to occur only in the intestinal tract of infants during the first few weeks of life.

To such infants, the menace involved in the use of waters of high nitrate content in their feeding formulas, is by no means a negligible one. Surveys in Minnesota in 1947–1949 revealed 139 cases with 14 deaths, which would roughly indicate an incidence of one case per 1,000 live births per annum. The concentration of nitrate nitrogen in well waters which has been found to be associated with this disease has almost always been over 20 p.p.m. and in the majority of instances, over 40 p.p.m. It is generally agreed that in the areas where methemoglobinemia exists, water from private household well supplies containing more than 10 p.p.m. of nitrate nitrogen should not be used for infant feeding.

The phrase " in the areas where this disease exists " opens up the most intriguing aspects of the problem. So far, recognized cases of methemoglobinemia have been reported only from the following states and provinces: Illinois, Indiana, Iowa, Kansas, Manitoba, Michigan, Minnesota, Missouri, Nebraska, New York (2 cases), North Dakota, Ontario, and Saskatchewan. With the exception of New York, these states and provinces form a single contiguous area and the only states in that area not known to be affected are South Dakota and Wisconsin. Other areas, such as certain parts of Texas and Oklahoma, have nitrate concentrations in their well waters up to several hundred p.p.m.— but no reported cases. It is also puzzling

that no case of methemoglobinemia has ever been attributed to a public well water supply, although there are several such supplies in Illinois with nitrogen contents of over 100 p.p.m.

Thus, the incidence of this disease is — so far as present knowledge goes — confined to private well supplies (generally shallow wells and of insanitary location or faulty construction) in the North Central States and the Central Provinces of Canada. It has been suggested that there may be some difference between nitrate nitrogen derived from organic and inorganic sources, or that some additional factor or factors due to biological activities in soil or well water may be necessary to facilitate the breakdown of nitrates in the intestine. The problems involved are highly challenging to further research.[3]

1. National Research Council, 2101 Constitution Avenue, Washington 25.
2. *J.A.M.A.* 129:112 (Sept. 8), 1943.
3. This problem is more fully discussed by the Committee on Water Supply in the *A.P.H.A. Year Book*, 1949–1950, pp. 110–115.

THE STRAIGHT ROAD

SENATOR Harry F. Bird of Virginia, in speeches made during the past spring, has given vigorous voice to his conviction that various national policies (already adopted or proposed for the future) constitute a road which will be "converted into a super, non-stop, high-speed, no-turn highway straight to socialism." His remedy, of course, is to cut the budget.

We should all very much like to have our taxes reduced; but — even in the heat of a political campaign — those of us who retain some sense of balance know quite well that the primary reason for high taxes is the liquidation of the cost of two World Wars and the essentially vital provision of defense against a third catastrophe. The only place where any economy can be effected is in the relatively small fraction of the national allotments for civilian purposes at home.

We are not, here, concerned with the soundness of particular forms of federal expenditure, present or future. We are, however, gravely concerned with the assumption of the "straight road" which suggests in its logical implications that we must either increase taxes and go on increasing them for ever or decrease taxes and go on decreasing them for ever. If the government took over all our earnings it would certainly be Communism. If it took none of our earnings, it would, with equal certainty, be Anarchism. But why should we accept either of these extreme logical absurdities?

Since the days of Theodore Roosevelt and Woodrow Wilson, there has been growing recognition of the fact that the true well-being of the nation could be promoted by concerted action along certain lines, where the expenditure of one dollar for health or housing or social security, would bring us several dollars worth of health and happiness. As Jefferson said, and Lincoln echoed, the legitimate object of government is "to do for the people what they cannot by individual effort do at all, or do so well, for themselves." This is the philosophy of what is called in scorn the "Welfare State." Better perhaps, a Welfare State than an "Illfare State"; but the Service State is a better term.

At least, in our thinking, let us avoid the bogies of "straight roads" leading to Communism at one end and Anarchism at the other. These menaces are the fruits of pure logic which is rarely applicable to the complexities of human affairs. It is

pure logic which constitutes the temporary strength and the ultimately fatal weakness of the Russians. Logic deals with known and definable factors, a, b, and c; but in life if you change b, x and y may come into the picture. The essential and saving grace of democracy is its empiricism, its experimentalism, its capacity to change and adapt. The "road" is *our* road; and not a straight one, as the Kremlin hopes and the reactionaries fear. We can follow it as far as we will; and when we have got where we want, we can stop — because we are a free people.

Let us, then, judge proposed policies on their own merits and not in relation to imagined future trends along a line projected to infinity. Let us not be frightened by bogies. Life is not easy, for men or for nations. There may be dangers in moving forward; or greater dangers in standing still. When Shakespeare wrote of the fear which "makes us rather bear those ills we have than fly to others that we know not of," he put the words in the mouth of Hamlet — not of Henry the Fifth.

EVALUATION AND HEALTH PRACTICE

A REMARKABLE record of sustained support and persistent investigation in public health administration was terminated on March 31, 1950, with the completion of the series of grants by the Commonwealth Fund of New York to the A.P.H.A. and its Committee on Administrative Practice in support of our State Studies and Evaluation project.

So far as Studies are concerned, the staff has conducted formal surveys in 14 states, one province, and 27 cities and counties. The reports on these surveys, the knowledge secured and organized in the course of the studies and the principles which have evolved from committee consideration have greatly influenced public health administration in this country and Canada. Expert consultant service was provided and widely used. These studies and field services are a monument to the ability and industry of Dr. Carl E. Buck who was Field Director of the Association during most of this period, and whose counsel was sought by health officers and communities throughout the country.

A second aspect of the committee's work was the development of a schedule to be used by health officers in a self-evaluation of their work. This was the logical outgrowth of a program, originally introduced in 1925, and including the Health Conservation Contest, which was carried on for a period of 18 years. In 1943, however, the old *Appraisal Form* was replaced by the *Evaluation Schedule* which has found its way into public health practice on almost every level and through a great many avenues. Approximately 30,000 copies have been distributed, almost all of them on the basis of specific requests. We have a record in the A.P.H.A. office of the formal use of the *Schedule* by 446 communities since 1943. What is not known to us, is of course, the number of communities who have partially completed the *Schedule* or who have used it for their own studies without submitting it to the Association. We have a great deal of hearsay evidence, however, that this number is large. The commonest use of the *Schedule* is by communities with a local health unit for regular periodic appraisal. It has also been used by new health units or by health officers just beginning a new assignment for the purpose of establishing a base line from which to measure future progress.

Particularly significant uses of the *Evaluation Schedule* have been made (sometimes in coöperation with local universities) in Berkeley, Calif., Charlotte, N. C.,

Flint, Mich., and Racine, Wis. Texas has made the preparation of the *Schedule* a part of the requirement for grant-in-aid funds. During the past two years New York State required that every county, city, or district unit complete the *Schedule* reasonably well at least once.

The *Evaluation Schedule* has found its place as an active teaching device in almost all of the schools of public health. This trend has become much more noticeable and much more functional during recent years.

The *Schedule* is serving as a basis for the development of evaluation tools, in a wide variety of other fields than public health. It is finding its way into a number of schools of social work, and has influenced studies in this field. It has been adapted for use by special study groups such as a citizen's group in California, the Business and Professional Women's Clubs, and so forth. The *Municipal Year Book*, published by the International City Manager's Association, regularly devotes a section to an analysis of the findings of the *Schedule*.

The results of the application of the *Evaluation Schedule* have been summarized in graph form in the publication known as *Health Practice Indices*, of which nearly 20,000 copies have been distributed since 1943, again almost entirely on a specific request basis. Texas has developed *Health Practice Indices* recording their own state experiences. A similar attempt has been made in Brazil. *Health Practice Indices* remains the only general record of actual public health practices serving over 20,000,000 people.

It is pertinent to emphasize that as extensive and significant as the progress of evaluation and of the support of the Commonwealth Fund has been, the job is by no means finished. The *Evaluation Schedule* is now in need of revision. The knowledge gained from the experiences of the last decade, and particularly through the three years of the research project, can be focused on a revision which would advance evaluation rapidly and with greatly increased precision. No funds are at present available for this purpose; but the Committee on Administrative Practice is seeking the support necessary to continue this essential activity. We can, however, look with pride and satisfaction at the results attained in the past.

Letter to the Editor

TO THE EDITOR:

The editorial discussion on "office management" (p. 82, January issue) and Dr. Troupin's thought-provoking letter to the Editor (pp. 472, 473, April issue) present two clarifying views on a timely subject.

The top administrator of a health agency is responsible for the overall integration of all activities, aided by intermediate personnel concerned with the supervision and performance of one or more specific assignments.

Office management or, as Dr. Troupin intimates, "office administration," should be concerned with record keeping, analysis, and related activities to aid and improve not only the intermediate administrative functions but the broadest one, namely the general administration of the agency. In most health agencies, however, office activities are designed and managed largely if not solely for the purpose of accomplishing the intermediate administrative functions.

To implement top administration, office administration must develop tools which, if constantly employed, will:

1. Clarify the program and the objectives of the agency.
2. Describe the area and population served.
3. Maintain adequate records of the recruitment, employment and development of necessary staff and facilities.
4. Permit the continuous study of all activities and results.

Obviously "experts" who purport to help the administrator in devising tools and administrative systems to those ends must know the field of public health as well as the office techniques which are aimed toward the integration of organizational activities, the improvement of general efficiency and the elimination of waste.

The possibilities of "office management" in a health agency are in need of more penetrating and imaginative exploration. It would be extremely valuable if others, with views on this subject, would make them known.

May 5, 1950

LOUIS L. FELDMAN
Underwriter
Health Insurance Plan of Greater New York
(co-author—Office Management for Public Health Workers)

The Health Education Center at the St. Louis Annual Meeting

An unprecedented participation by all Association Sections will occur in the Health Education Center at the St. Louis Annual Meeting, October 30–November 3. The Center again will be a joint project of the Association and the National Publicity Council for Health and Welfare Services, Inc. At a planning meeting last month of the Program Subcommittee on the Center, chaired by Dr. George Rosen, it was decided that each Section will present health education and publicity materials dealing with its own field of health work. Some will coördinate their exhibits with subjects under discussion in the program, others will build their display around a theme, and still others will present a representative collection of materials in their field. A group of experienced consultants will assist in the review and coördination of the material submitted for display. Most Sections, in addition to an exhibit of materials, will offer a consultation service.

If you have materials you would like to submit for inclusion in the exhibit or suggestions concerning the Health Education Center, communicate with your Section Chairman.

Clearing House on Public Health Salary Information and Personnel Needs

USEFULNESS OF STATE AND LOCAL SALARY STUDIES

Public health workers, no less than other professional groups, are concerned with their relative economic status. Salary levels are important to the maintenance of adequate public health services throughout the nation. Obviously, the recruitment and retention of qualified personnel in the several public health specialties depend a great deal upon the general competitive position of the profession as a whole. To ascertain what that competitive position is, facts are necessary.

In 1947 the American Public Health Association, the Association of State and Territorial Health Officers, and the Public Health Service began a series of nation-wide studies of salaries received by state and local public health workers. Three such coöperative studies have been made of salaries paid to state public health workers in November, 1947, August, 1948, and August, 1949; two other studies were based on salaries of local public health workers in May, 1948, and April, 1949. With the cooperation of the National Organization for Public Health Nursing special supplementary salary data for public health nurses employed by boards of education and nonofficial local health agencies were published in connection with the 1949 local salary study. The Conference of State and Provincial Public Health Laboratory Directors assisted with the preparation of a supplement to the 1949 state salary study which dealt with selected groups of laboratory workers.

Prior to the collection and publication of salary data by the three coöperating organizations under the aegis of the A.P.H.A. Subcommittee on Salary Study, Dr. George T. Palmer of the Public Health Service had made an analysis of salaries reported on budgets submitted by the states in connection with requests for federal health grants. The N.O.P.H.N. and the state laboratory directors had also been active in collecting information about salaries of public health nurses and laboratory personnel. Data on salaries of public health statisticians were collected by the Statistics Section of the A.P.H.A.

Working through the Subcommittee on Salary Study, the A.P.H.A., the Association of State and Territorial Health Officers, and the Public Health Service set up as objectives of the salary studies the development of basic figures to be used:

"1. In recommending salary levels for the various groups of public health workers
2. For a broadly conceived public relations program promoting the interest of public health workers
3. By administrators who are aiming to improve salaries in their own agencies."

How well these objectives have been met is reflected in the wide demand for copies of the studies and in the salary data themselves as successive studies have been made.

A further check on the continued need for salary studies was made recently by means of a questionnaire directed to 1,100 state and local health officers. Replies were received from 26 state and 250 local health officers, a 25 per cent return. Geographically the replies were

TABLE 1

Percentage Distribution of the Detailed Replies to Items A, B, and C1 of Salary Study Questionnaire

Item	Per cent		
	Yes	*No*	*No Answer*
A. Have you found these studies of value?	87.6	12.0	0.4
1. Helpful in obtaining salary increases for staff members?	55.2	19.5	25.3
2. Helpful in dealing successfully with appropriating bodies?	54.2	17.7	28.1
3. Useful in the preparation of talks, for general information or informal discussion?	55.8	12.7	31.5
4. Useful in staff discussions of salary problem?	65.1	10.6	24.3
B. Have you encountered difficulties in using the studies?	18.4	70.0	11.6
1. Salary groupings cannot be used.	8.6	25.6	65.8
2. Professional classes need more precise definition.	11.9	29.4	58.7
3. Data could be presented in a more suitable form.	7.0	30.4	62.6
4. If staff salaries were higher than the median salaries of the study, did the study tend to bar efforts to raise salaries?	9.0	37.8	53.2
C. 1. Should the studies be continued?	89.5	4.5	6.0

well distributed. On the basis of Federal Security Regions * replies were received as follows: I—24; II—25; III—31; IV—31; V—25; VI—42; VII—17; VIII—30; IX—9; and X—42.

Four basic questions were asked of the 1,100 health officers: (1) Have you found these studies to be of value to you? (2) Have you encountered difficulties in using the studies? (3) Should the studies be continued? (4) How often should they be published? The questionnaire also provided the usual space and encouragement for recording comments and suggestions outside the framework of the specific questions. A significant number of those replying took the opportunity to register either favorable or unfavorable reactions.

In answer to the first question, 88 per cent agreed that the studies have been of some value to them; 12 per cent reported negatively. Fewer than 1 per cent failed to answer this question. A much greater number, more than one-fourth, did not indicate how the salary studies had been helpful. More than half, however, stated specifically that the studies had been helpful: in obtaining salary increases for staff members, in dealing successfully with appropriating bodies, in the preparation of talks, and in staff discussions of salary problems. The largest number, 65 per cent, indicated the value of the studies for staff discussions (See Table 1).

Analysis of the answers to the first question, "Have you found these studies to be of value to you?" shows 90 per cent or more "yes" answers in Federal Security Regions I, II, IV, V, and VIII. Only in Regions VII and X did the "yes" percentage drop below 80.

Almost 12 per cent of those returning questionnaires did not answer the second question, "Have you encountered difficulties in using the studies?" Seventy per cent reported no difficulties and 18 per cent indicated dissatisfaction with salary groupings, definitions of professional classes, general presentation of the data, adverse effect on efforts to raise salaries, or inapplicability to spe-

* Region I—Conn., Me., Mass., N.H., R.I., Vt.; Region II—Dela., N.J., N.Y., Pa.; Region III—D.C., Md., N.C., Va., W.Va.,; Region IV—Ky., Mich., Ohio; Region V—Ill., Ind., Minn., Wis.; Region VI—Ala., Fla., Ga., Miss., S.C., Tenn.; Region VII—Ia., Kans., Mo., Neb., N.D., S.D.; Region VIII—Ark., La., N.M., Okla., Tex.; Region IX—Colo., Ida., Mont., Utah, Wyo.; Region X—Ariz., Calif., Nev., Ore., Wash.

cific problems. Fewer than 20 per cent in Regions I, IV, VI, and VIII reported difficulties; more than 30 per cent in Regions VII and IX.

Some of those who have had difficulty using the studies must, nevertheless, concede their general value. Otherwise, 90 per cent would not have approved continuation of the studies. Only 4 per cent advised against continuing the studies; 6 per cent failed to answer this question. Lack of enthusiasm for the salary data is most evident in Regions VII and IX.

In contrast to the decisiveness of the opinions recorded in answer to the first three questions, opinion was pretty evenly divided on the question of annual vs. biennial publication. Although fully one-fifth did not reply to this question, those who did were divided 47 per cent in favor of annual, and 53 per cent for biennial publication of state salary studies. Of the larger proportion expressing their views about publication of the local salary studies, 53 per cent favored the more frequent gathering of data while 47 per cent would be satisfied with a biennial study. Of those expressing views about the state salary studies significant weight in favor of the annual schedule appears only in Regions V and VII. On the other hand, the weight of opinion in Regions I, II, VI, VIII, and IX is significantly toward biennial publication. As indicated in the general statistics given above there is more support for the annual publication of the local salary studies than there is for the annual state studies. On a regional basis, yearly intervals are decisively approved in Regions IV, V, VII, and VIII; biennial studies are preferred most strongly in Regions I, II, and IX. Table 2 summarizes the recommendations as to frequency of state and local studies.

With the results of the questionnaire before it, the Subcommittee on Salary Study agreed to advise the A.P.H.A., the Association of State and Territorial Health Officers, and the Public Health Service of its recommendation for continuing the two salary studies on an annual basis as originally planned. At the end of the 5 year period which was agreed upon in 1947, another evaluation will be made. The subcommittee was of the opinion that basic trend data covering a minimum of 5 years were essential if the study objectives are to be fully realized.

TABLE 2

Frequency	*State Studies*	*Local Studies*
Total	100.0	100.0
At Least Annually	37.2	50.6
Biennially	42.7[a]	44.7[a]
No Answer	20.1	4.6

[a] Includes 0.4 and 0.8 per cent recommending triennial state and local studies.

Many of the objections raised against the current salary studies serve to point up deficiencies that were anticipated when the studies were planned. For example, it was not unexpected that classification of positions based upon payroll titles, working titles, official job descriptions, and standard definitions of typical functions would be inexact. Nor was the subcommittee unaware of the significance of organization sizes, scope of health programs, population and economic characteristics of various areas on salary levels. Its objective, however, taking into account the obvious shortcomings of the methodology used, was to produce quickly some broad factual data indicative of the economic status of state and local public health workers. Nation-wide trends may be discovered thus by using admittedly crude methods. The advantage of having current data to serve as a general index outweighs considerations of exactness in reporting and tabulating which could be obtained only as a result of extensive detailed analysis of data and field investigations.

Refinements of methodology may still be introduced in line with some of the excellent suggestions made by those who

returned questionnaires. If the present studies are to retain the essential characteristics of current indices, however, more detailed and more basic studies of salaries in relation to job responsibilities must be separately pursued. The A.P.H.A. Sections, the several professional groups, and the Salary Subcommittee have the tools with which to study more fully the problems of public health salaries.

SALARIES IN SMALL TOWNS

The Michigan Municipal League through its Municipal Personnel Service has analyzed salaries, hours of work, and overtime and holiday pay practices for 41 Michigan cities and villages with populations between 4,000 and 10,000. Aside from furnishing a comparison for salaries in other small town areas, a good deal of information can also be deduced about health services. For instance, 11 towns have no director of health, in five the service is performed by the county, in one there is a joint city-county service, in one the salary is on a fee basis, and in 14 the salary is part-time, ranging from $250 to $3,600 annually, with the largest number paying $600. *Information Bulletin No. 62,* Municipal Personnel Service, 205 South State St., Ann Arbor, Mich., $1.25.

PACIFIC ISLANDS COMPETITION

The U. S. Department of the Interior has taken over from the Navy jurisdiction of the Pacific Islands. It has openings for doctors with salaries ranging from $8,000 to $11,000 annually including the 25 per cent bonus for overseas service.

GROUP PRACTICE EARNINGS

The sixth in a series on "Medical Group Practice in the United States" is an analysis of incomes of physicians in such medical groups. Vacations, sick leave, insurance, retirement plans, and miscellaneous benefits are also discussed.

The study is based upon 18 medical groups with a total of 77 physicians. The report says, "These data, although based on a small sample of groups, reflect the actual and recent experience of physicians in group practice and to this extent may serve as some index of existing conditions."

By comparison with incomes for independent practice as reported in the studies of Medical Economics, group practice earnings were somewhat higher particularly among those in practice 20 years or longer. Specialty status appeared to be less of a factor in income than in independent practice. There was a marked difference, however, between partners and employed physicians.

"Other things being equal, it seems fair to assume that the development of medical group practice as a widespread phenomenon will be considerably influenced by the kind of remuneration and other tangible benefits likely to accrue to the physicians in this mode of practice." Substitute "public health practice" for "medical group practice" in this sentence and you have the philosophy back of current preoccupation with salaries of public health workers.

This series of group practice studies is being made by the Division of Public Health of the U. S. Public Health Service. The author of the "Income of Physicians" is Marcus S. Goldstein, Ph.D., public health administrator of the Service. It was first published in the *Journal of the American Medical Association* for April 8, 1950. Reprints are available, apparently from the Division of Public Health Methods, U. S. Public Health Service.

EVERYTHING ABOUT NURSING SCHOOLS

In preparation for the new academic year, the Committee on Careers in Nursing, which is a joint committee of the six national nursing agencies, has prepared a directory of *Schools of Nursing in the United States,* March, 1950.

Although the committee's predecessor, the Nursing Information Bureau, published a directory in 1947, the present listing is considered a real first. It is all-inclusive—degrees given, status of approval of programs, students accepted, etc. With it is a tabulation of opportunities and salary ranges in nursing in five classifications, institutional nursing, public health nursing, nursing education, executive and administrative, and private practice and other. Public health nursing has a salary range of from $2,200 to $9,500. Also included is a poster, Nursing: Career With A Future, with the usual beautiful golden haired nurse whose blue eyes and bluer eyelashes pick up in the best artistic tradition the blue in the ribbon of her cap. The directory is available from Committee on Careers in Nursing, 1790 Broadway, New York 19, 10 cents; $7.50 per 100.

On the theory obviously that a list of schools is futile without students with a burning desire to attend them, the committee celebrated Nurse Recruitment Sunday on last May 7. It prepared for the day with a fact sheet and pictures illustrating that "a nurse's job is vigorous, varied and satisfying," and a radio address by Congresswoman Bolton of Ohio on the eve of Recruitment Sunday. The new directory was included, thus tying up stimulant and food in one package.

NEW HAMPSHIRE LAMENTS AGAIN

The *New Hampsire Health News* May, 1950, makes this comment upon the resignation of the state's Director of Communicable Disease Control, Edward W. Colby, M.D., to become Health Officer of Portland, Me.: "We refrain here from comment on the fact that it was the City of Portland's attractive offer that drew from our state one of the ablest public health officials it has ever had. Besides being a staggering blow to our Health Department, Dr. Colby's going will be a personal loss to every one of us."

A.P.H.A. membership application blank page XXIX

Credit Lines

"FORTUNE" ON HEALTH INSURANCE

The need for a system of national health insurance is presented in the March, 1950, issue of *Fortune Magazine* in which the author, Russell W. Davenport, concludes that "Health Insurance Is Next." Sharp issue is taken both with those who disclaim the need and those who propose a limited solution of the problem that would reach only the lowest income groups.

The author compares what he believes to be the only two current legislative proposals that attempt a thorough-going solution of the problem — the administration bill (S. 1679 and H. R. 4312) and the bill introduced by a group of progressive Republicans (S. 1970 and H. R. 4919). Mr. Davenport is a frank advocate of the latter proposal which would provide state and federal funds to promote and aid voluntary plans in bringing health insurance to the entire population. This measure contains a number of unique provisions, among which are included: payment by subscribers in accordance with ability to pay — i.e., percentage of income; development of a federal "yardstick" which would determine the amount of aid given to a plan in accordance with the scope of services rendered; the establishment of an Advisory Council composed entirely of non-professional persons.

This reasoned contribution to the discussion of so highly controversial a subject in a magazine well "above the battle" is to be commended whether or not one accepts its conclusions. *Fortune Magazine*, 350 Fifth Ave., New York.

TUBERCULOSIS STATISTICS ANALYZED

The annual *Tuberculosis Reference Statistical Yearbook*, Year 1948, has just been published by the New York Tuberculosis and Health Association. Prepared under the direction of the Association's statistician and assistant director, Godias J. Drolet, it is one of many examples of the contributions he has made to the broad field of statistics in the service of program — not merely for New York City but for the nation.

As in earlier years, the morbidity and mortality figures, clinic, hospital, and sanatorium services for New York City are fully tabulated and analyzed. In addition, there is an analysis of morbidity and mortality for the United States both by age and state and for 50 of its largest cities for the last five years, as well as figures for a number of Central and South American cities, and for certain sections of Europe.

One historical table shows the United States death rate annually for the years 1900–1948. It started at 202 per 100,000 of population at the beginning of the century and 40 years later was down to 30. In each of the first two decades of the century, the rate went down by 20 per cent, in each of the last three about .40 per cent, a total drop of 85 per cent in the 49 years.

Historically, this *Yearbook* dates back to 1931 when it was called "Tuberculosis Consolidated Statements." Here for the first time, clinic and tuberculosis sanatorium conference reports were brought together into a single package with other tuberculosis figures for metropolitan New York. But even in 1929 Mr. Drolet had gone beyond the parochial interests of New York City to prepare a sheet of tuberculosis statistics for some of the larger cities of the United States.

One human note in this latest book—a footnote to an erratum says: "Error was discovered by that amiable, seventy-

six year old youngster and keen observer, Haven Emerson. Thanks Dr. Emerson for this contribution.—EDITOR"

STATISTICIANS ANALYZE THEMSELVES

The Statistics Section of the American Public Health Association represents about 4 per cent of the total membership. Eight of the Sections have a larger membership, with Health Officers representing 15 per cent.

But the statisticians are not letting their small numbers cramp their style. The Section was the first, and so far the only one, to prepare a *Directory of Public Health* (or vital) *Statisticians*, both member and non-member. The fourth edition of this *Directory* published in 1948 included the names of more than 1,300 workers concerned with summarizing what is happening in public health and related fields in terms of mathematical concepts.

Carrying on from there, the Statistics Section made a 1949 project of analyzing themselves further. The result is *Activities and Interests of Public Health Statisticians* recently published. Its first page will give you a picture of what the mythical average statistics section member looks like, and he's not very different from the non-member who is doing the same kind of work. Their protective coloration is apparently a function of the trade rather than of the member.

The Chairman of the Section's six man Committee on Membership and Directory, under whose direction the directory and study were prepared, was Iwao Moriyama, Ph.D.

The report is available from the American Public Health Association.

CARDIOVASCULAR DISEASE CONFERENCE

An attractive, well designed, pithy, preliminary report of the National Conference on Cardiovascular Diseases is available. This Conference, held in Washington, D. C., in January, 1950, was sponsored jointly by the American Heart Association and the National Heart Institute. Useful for professionals and informed citizens, the 28 page volume provides a broad summary of current knowledge, needs, and philosophy of cardiovascular diseases in respect to technical knowledge and research, community services, and professional education. Get it from the American Heart Association, 1775 Broadway, New York 19, for $.25. Reductions for quantity orders.

THE PENNSYLVANIA POT BOILS

A number of citizen and professional agencies in Pennsylvania have coöperated to produce a splendid pamphlet *Pennsylvania's Health Is Your Concern!* It is an attractive, readable 15 page digest of the 339 page report of Pennsylvania's public health survey. Pre-publication demand led to the printing of 75,000 copies. It can be secured from the Pennsylvania Citizens Association for Health and Welfare or the Pennsylvania Tuberculosis and Health Society, 311 South Juniper St., Philadelphia 7, Pa.

FLUORIDATION IN THE POPULAR PRESS

"They Drink Away" tells how Wisconsin children, and those in many other areas of the United States, drink away their toothaches. The *American Magazine* of May, 1950, tells how "the constant use of fluoridated water by children builds armor plate on their teeth," and the story is told both in human terms and in money saved. In Milwaukee, for example, the Health Commissioner estimates a reduction of 50 million dollars in dental bills in the next 16 years.

This is the type of material that is found increasingly in popular magazines and that gets to a far larger audience than the professional health magazines. Health educators should miss no opportunities both to use such articles and to

stimulate their writing. Reprints of this article would be useful in organizing a community fluoridation project. Information on whether they are available from *American Magazine,* 640 Fifth Ave., New York 19.

HOSPITAL TUBERCULOSIS CASE FINDING

With the purpose of encouraging universal chest x-rays for hospital admissions in New York City, the Hospital Council of Greater New York and the New York Tuberculosis and Health Association have collaborated in *The Importance of the Hospital as a Tuberculosis Case Finding Center.* At least one person out of ten, or nearly a million persons, are admitted to New York City's hospitals annually, thus representing the largest single group available for study, besides having a considerably higher percentage of chest pathology than the general population. That such a mass x-ray procedure is not gilding the lily of prevention would seem to be amply proved by the fact that in the eight years 1940 to 1947 the number of recognized cases of tuberculosis in the United States rose by one-third even though in the same period the mortality rate declined 20 per cent. Available without charge from the Hospital Council of Greater New York, 220 E. 42nd St., New York.

A LIVING MEMORIAL

In honor of his son, John Jr., who died of brain tumor at the age of 17, the writer, John Gunther, has established a "John Gunther Jr. Memorial Gift" in the Department of Neurological Surgery at the Columbia-Presbyterian Medical Center in New York. The fund will be used for research in neurological surgery for children, with particular reference to brain tumors and allied diseases. The fund is derived from the sale of *Death Be Not Proud,* the writer's tribute to the gallantry of his son's life. Harper and Brothers, the publisher, is also foregoing profits from the sale of the book to add to this and other benefactions for children.

LOCAL HEALTH UNITS AGAIN

That nearly one-third of the nation continues to be without the services of a full-time medical officer of health and the additional minimum professional staff needed were enough reason to mention the program frequently. But when the subject hits such an expensive and high powered advertising medium as the *Saturday Evening Post,* this column is bound to take notice. Which is by way of introduction to "Public-Health Doctor," by Richard Thruelsen in the *Post* of May 13, 1950, in a series on "Men At Work." Illustrated with several beautifully colored photographs, it tells what happens in the public health life of Murphy Patrick Martin, M.D., currently Health Officer of Iberia, St. Martin, and St. Mary parishes of Louisiana, a territory of some 2,000 square miles and 113,000 souls. It's as good a way as any — and better than most — of telling the man on the street what public health services are and some of the intangible rewards of those who work at it — often at less than the average rewards and more than the average headaches of equally well trained persons in comparable professions. As far as we know reprints are not available.

FEW STATES HAVE THE OPPORTUNITY

The New Jersey Health and Sanitary Association has published a 75th Anniversary Issue. This whimsical, historical account of significant progress from an early beginning is inspiring and reminds us that many of our current "pearls of wisdom" have been spoken before. Copies are presumably available from the Secretary, John Hall, 3 Morris Street, Freehold, N. J.

THE OUNCE OF PREVENTION

A recent *Newsletter* of the Idaho

Public Health Association shows that "ounce of prevention" is not merely a figure of speech, but a reality. With dollars piled on each other, it shows the pitiful amounts spent for preventive services in relation to those spent for curative or custodial. The amount spent for preventive health services is less than 10 per cent of what is spent for the medical care program, preventive mental health gets only 2 per cent of what care of mental patients costs and the tuberculosis prevention and case finding budget only 7 per cent of that for care of tuberculosis patients. "Penny-wise and pound-foolish," the *Newsletter* calls it.

MEDICAL EDUCATION

"Can We Pay for Our Medical Schools?" is the title of a thoughtful, penetrating, provocative analysis of the current problems of medical education in the June number of *The Atlantic Monthly*. Dr. George B. Darling, Director of Medical Affairs at Yale and formerly president of the W. K. Kellogg Foundation, has courageously and expertly explored the costs of medical education and the relevant problems of patterns of giving and of current research in a style which reminds us of the best of the early English essayists. Editorial Office, 8 Arlington St., Boston, 16.

USING FACILITIES EFFICIENTLY

Psychiatric clinic facilities in New York City in the early 40's were in short supply both as to clinics and personnel. Hence, in 1944 a study was undertaken to determine whether the facilities were used to maximum efficiency. The results have now been published by the New York City Mental Hygiene Committee (105 East 22nd St., New York 10) under the title "The Functioning of Psychiatric Clinics in New York City: A Study Toward the Prevention of Waste." Its findings are pertinent to the operation of psychiatric clinics elsewhere. A reorganization of the referral system is recommended whereby referring agencies do more selective referral and give the clinic more background information. The report also raises some important considerations about relative responsibilities to the patient and to teaching needs.

A PERSONNEL MANUAL

The second edition of New York City's *You and Your Health Department* is out. (See *A.J.P.H.* Nov., 1948, p. 1587 for the first edition).

The new volume of some 50 pages is the work of the same team that did the earlier one, William Brody, Personnel Officer of the New York City Department of Health, and Tom Darling of the New York Tuberculosis and Health Association. The latter has done the art work that both livens and enlightens the manual. We like best the puckish illustration of full retirement as being carried out on a stretcher. This manual is definitely not for distribution but personnel officers confronted with the need for a manual or even for establishing the policies that go into a manual might wheedle it from personnel director, William Brody.

PREVENTIVE MEDICINE NEWS LETTER

The Conference of Professors of Preventive Medicine started a *News Letter* in March, 1950. It resulted from a poll of the medical schools which by a ratio of three to one "favored a publication devoted to the interests of those teaching preventive medicine and public health." A feature is a "letters to the editor" column. In the first issue this was devoted to an argument against creating out of the present informal Conference a formal organization with constitution, dues, etc. by Lloyd Florio, M.D., professor of public health, University of Colorado School of Medicine.

The *News Letter* was made possible

in the first instance by a contribution from the Aluminum Company of America whose medical director, Dudley Irwin, M.D., said, "We are certain that your public health program has greatly benefited the cause of industrial health and will continue to do so in future. This is our way of indicating our faith in your objectives." The New York State Health Department through the director of the Bureau of Health Education, Granville W. Larimore, M.D., is also coöperating in the venture.

The editor of the *News Letter* is Ray E. Trussell, M.D., Albany Medical College, Albany, N. Y.

ALCOHOLISM FROM EAST TO WEST

Alcoholism as a public health problem is no longer an isolated concept. If proof were needed, one day's grist of mail were more than enough. All under April datelines, the Panama Canal Health Department's *Your Health*, the New Jersey *Public Health News*, and the *Stanford* (Calif.) *Law Review*, each discusses the subject. *Your Health* has a brief summary of the current situation — three-quarters of a million alcoholics and more than three million heavy social drinkers in the United States — with special emphasis on the value of Alcoholics Anonymous.

The New Jersey bulletin contributes a description of what an alcoholism control program in a state department of health should be, adding that alcoholism costs the country $765,000,000 a year, apart from broken homes, warped personalities, and minds gone wrong.

The *Stanford Law Review* in "Legislation for the Treatment of Alcoholics" suggests that California abolish all laws that deal with alcoholism as a penal offense and spend the 50 million dollars that alcoholism now costs the state in a state-wide rehabilitation program. This, it is believed, would salvage from 40 to 80 per cent of the state's nearly 300,000 alcoholics.

WORTH ACQUIRING

You and Your Health is one of 23 Life Adjustment Booklets, "to help young people solve the problems of everyday living." It is engagingly written by J. Roswell Gallagher, M.D., Phillips Academy school physician, and humorously illustrated by Kathleen Shepherd. Science Research Associates, 228 S. Wabash Avenue, Chicago 4.

What Your Health Department Can Do for You has just been released by the Washington State Health Department. It is the type of booklet at which nearly every state health department has taken a try — and at which the rest should. This one has a lot of little used approaches such as the comparison of 50 cents for a chest x-ray against the $16,000 the average case of tuberculosis costs and the $2 per capita cost of a health department as compared to more than $5 each for police and fire protection. The production in blue, white, and black and line drawings is dignified and successful. This is prepared primarily for use in the State of Washington, but others faced with the same problem who want to use its ideas can perhaps get it from the department, 1412 Smith Tower, Seattle 4.

Teacher Listen — The Children Speak is an attempt — that comes off — to help teachers, and we would suppose, parents as well, to understand the meanings behind the bully, the showoff, the clinging child and other varieties of "troublesome" children. In simple language, it should be of immense help in understanding "the language of children's behavior." Written by James L. Hymes, Jr., Ed.D., professor of education, George Peabody College for Teachers, it is charmingly illustrated by Barbara Cooney Porter. It is produced by the New York Committee on Mental Hygiene, State Charities Aid Association, from whom it is available. 105 E.

22nd St., New York 10, 25 cents; discounts for quantity orders.

ANNUAL REPORTS

Department of Health, City of New York, 1941–1948 would be noteworthy if only for the eight years it covers. But this annual report has many other interesting features. It reëstablishes the continuity of reports beginning with 1866. It covers the administration of two different mayors, of five different health commissioners, one of whom was in office nine days. But these are only incidental. The real meat of the report is made up of the manifold points at which the health department touches the lives of the city's eight million inhabitants. It is also a microcosm of the public health advances for the last decade — rapid treatment for the venereal diseases, mental hygiene education, dental health and nutrition as integral parts of a public health program, mass chest x-rays, among others.

Health Through Teamwork is the third annual report of the Health Council of Greater New York. The extent of its membership or involvement in its work indicates it to be a dynamic organization. Stormy waters ahead, however, may be suggested in that it already had a deficit of expenses over income in spite of the fact that three-fourths of its income came from foundations and similar sources that are usually available only in the early years of a new organization.

A study of the report also indicates an atypical organization. Of 9 community (neighborhood or district) councils, only 5 belong to what one might suppose would be the parent council. Further, many organizations belong to divisions without being members of the Council. For instance, the Council membership is 65, while its food and nutrition division includes 97 members, very few of whom belong to the Council itself.

The report looks very well and attractively produced, but a serious user of it will find some minor annoyance in the listing of agencies. One example of many similar confusions is the Children's Health Service which appears as a member of the Food and Nutrition Division, but in the Health Education Division it appears as Children's Health Service — N. Y. Diet Kitchen Association.

12th Annual Report, National Foundation for Infantile Paralysis covers 1949, reportedly the year of the largest epidemic of polio in the United States. It is notable for its dramatic quality and the candor with which the story of the society's activities in this catastrophe is told. The critical situation as to funds expended is emphasized by the fact that the average balance in chapter treasuries at the end of the year was less than $1,000, hardly the cost of caring for one paralyzed polio patient. In 13 states, local chapters on a state average were in the red. Aside from the human element — the care of the individual patient — the impact of the society upon polio research is impressive. The story of the Respirator F-12 is as exciting as a mystery. 120 Broadway, New York 5.

BOOKS AND REPORTS

All reviews are prepared on invitation. Unsolicited reviews cannot be accepted.

The Envelope—*By James S. Plant. New York: Commonwealth Fund.* 1950. 299 pp. Price, $3.00.

This volume is a provocative, carefully annotated, individualistic study of the impact of the world upon the child. The "envelope" is defined as "a property of that part of the personality which is in touch with the environment."

Twenty-one problems are explored in detail such as, security, authority, status preservation, the feeling of difference, symbolization, and reality and cadence. The work was long in the making, published posthumously and based to a large extent on Dr. Plant's 24 years as director of the Essex County (N. J.) Juvenile Clinic. It is extensively documented, particularly by the literature of the 30's.

The volume seeks to open vistas, and is marked by the use of such expressions as, "I wish I knew the answer." There is a rapid treatment of very many subjects with useful analyses of the elements. Words often have new meanings and the author often "differs with the psychoanalytical group." Psychiatrists must evaluate the technical aspects. The volume should be useful as a reference and as a point of departure for discussions in training sessions for students of child development, mental hygiene, and the family. The chapter on adequacy should be of especial interest to public health nurses and child health physicians.

ROSCOE P. KANDLE

Medical Entomology—*By Robert Matheson (2nd ed.) Ithaca: Comstock,* 1950. 612 pp. Price, $7.50.

This is the second edition of a book which appeared originally eighteen years ago. Ever since that time it has been part of the standard ration on which successive crops of medical entomologists have been reared. The new edition has been completely rewritten and contains many additional illustrations. It includes up-to-date information on disease transmission or causation by insects and other arthropods. Their life histories are described and keys are given for their identification. Control technology—including the use of modern insecticides and repellents—is discussed. Each of the twenty chapters is followed by a list of selected references to publications through 1948.

Thus Dr. Matheson's book brings together for the first time a useful summary of the new knowledge of medical entomology and insect control developed during and since the war. This is superimposed upon a tried-and-true reference framework of insect taxonomy and morphology.

Many more generations of medical entomologists will be nourished on its content. It is heartily recommended not only to them but to physicians, engineers, sanitarians, teachers, and other workers in or out of the public health field who have an interest in this specialty.

JUSTIN M. ANDREWS

The Premature Baby—*By V. Mary Crosse (2nd ed.) Philadelphia: Blakiston,* 1950. 167 pp. 14 ill. Price, $2.75.

The present edition of this excellent monograph on the Birmingham (England) Premature Center experience is a thorough revision and expansion of the first edition published in 1945. Like the miniature human being with which

it deals, Dr. Crosse's small book contains the essentials for its purpose. There are chapters on definitions, general management, institutional care, home care, clothing, feeding, complications, and statistics. There are many small changes throughout the text and major alterations in the sections on nutrition, antibiotics, hemorrhagic diseases, epidemic diarrhea and pemphigus.

The clinical and administrative methods used are simple. Chief variations from practice in this country occur in use of masks, much handling of infants on nurses' laps, and preference for cribs heated with hot water bottles over mechanically operated incubators.

Most remarkable are the 27 pages of statistics on data from 1931 to 1946 involving 5,006 live births, 938 stillbirths, 1,103 neonatal deaths among prematures, and a follow-up of 812 cases. The measure of statistical detail greatly exceeds that in the Hess-Lundeen text.

Despite the absence of reference to retrolental fibroplasia and cost of program operation, this is a valuable reference for all health service personnel concerned with care of the premature infant. HENRIETTA HERBOLSHEIMER

Principles of Health Education Applied—*By Clifford Lee Brownell. New York: McGraw-Hill,* 1949. 366 pp. Price, $3.75.

With the aid of several of his colleagues at Teachers College, Columbia University, the author has produced an important addition to the growing number of textbooks in health education. This importance stems from the realistic approach which has been taken in defining and clarifying the many problems which confront us in the full realization of an effective program of health education. Throughout the text an attempt has been made to present both sides of those problems which are in any way controversial. Sufficient information is presented so that the student can begin to form his own opinion about issues such as prepayment health insurance, the administration of school health services, and euthanasia. Ample references are provided for the student who wishes to study these problems further. An effort is made throughout to emphasize the relationship which exists between school and community in the promotion of improved individual and community health.

Written for college students who are preparing to be teachers, the book covers in a brief but thorough way present-day knowledge about the many health problems and conditions which affect individual and community health. Basic facts about health and disease, growth and development, and the health resources which exist in the community are covered in four chapters. The balance of the book (8 chapters) is devoted to a well developed discussion of school health, covering school organization, health service and guidance, education of the handicapped, healthful school living, health and safety instruction, health education and physical education, techniques of evaluation, and professional preparation for health education.

This book is a well thought out and documented discussion of the principles of health education. It should prove a real help to those responsible for the development and teaching of courses for teachers. Superintendents and other school administrators as well as interested citizens will find this book helpful in clarifying the school's role in health education. S. S. LIFSON

The Public Relations Committee—*Why and How It Works—By David M. Church. New York: National Publicity Council for Health and Welfare Services,* 1949. 27 pp. Price, $1.00.

In dealing with ideas, Mr. Church seems not to have heeded his own wise chapter heading, "First Let's Clear the Air." Under this heading, he defines

public relations, publicity, and the committee. However, he gives little or no help in the serious problem of defining the public. It is usually necessary for an institution to analyze the large undifferentiated general public and to chart out those portions which are most concerned with its work. Mr. Church must be aware of this, since in a later discussion, he makes the sound statement: ". . . publicity must be followed by someone asking someone to do something—give or work, or both." Few institutions are ready to take on the whole population under a charge as specific as this one.

His definition of public relations is ". . . that course of action which guides an institution, or an individual, in a course which will earn and hold the favorable opinion of the public." Reduced to its components, the phrase says: "public relations—a course" or "a course—good public relations."

He goes on to say: "Favorable public opinion is not static. Concepts of right and wrong change. (*Sic.*) Public relations should, therefore be fluid and constantly attuned to changing public concepts."

And later: "The Public Relations Committee cannot be expected to change attitudes toward an institution unless the institution's activities are changed to meet prevailing attitudes."

These statements seem to imply that there is no longer a need for institutions and organizations to pioneer, to educate the public, and to influence people to the support of new ideas. It is fortunate that, in the days when vaccination was a controversial issue, the health departments did not set their course purely by prevailing public opinion.

But when he gets down to particulars, Mr. Church is on firm ground. He understands thoroughly the happy interrelation of paid staff and volunteer workers. He knows the nature of good committee members and the ways of using committees fruitfully. He gives valuable advice on the optimum size of committees, the most efficient ways of organizing meetings, the pitfalls to be avoided in committee work. His able defining of different kinds of publicity committees in terms of their advisory and their working functions should stimulate some practical improvements in committee organization.

Like the usual publications of the National Publicity Council for Health and Welfare Services, the booklet is an object lesson in excellent layout and typography. In short, it is a practical working tool, a little weak on know-why, but strong on know-how.

RAYMOND T. RICH

Where Children Come First—A Study of the P. T. A. Idea—*By Harry and Bonaro Overstreet (1st ed.) Chicago: National Congress of Parents and Teachers,* 1949. 293 pp. Price, $3.00.

Here is a book of interest to parents, teachers, and all who work in close conjunction with or are interested in the parent-teacher movement. It is the story of the National Congress of Parents and Teachers from its inception in 1897 with a few thousand interested people until the present time when there are more than five million members. The book is also the story of the founders of the Congress, Alice Birney and Phoebe Hearst, and their dream of a better world for children. A world that would broaden and enrich our children regardless of religion, race, economic status, or politics. Out of this dream developed the National Congress of Mothers, later to become known as the National Congress of Parents and Teachers.

In the little more than fifty years the Congress has been organized, it has participated in the fight to obtain such valuable and needed legislation as child labor laws, juvenile courts, care of dependent and handicapped children, better schools, and improved health for

the preschool and school age child, and federal aid to education. The list of activities is far too long to enumerate here.

The book is well written and liberally sprinkled with excerpts from correspondence, addresses, Proceedings of the Congress, and the histories of the state chapters. No conscientious parent, educator, or welfare worker can or should ignore this sincere message.

AGNES LYON BROWN

State Health Officers Communicable Disease Center Conference—*Communicable Disease Center, FSA-Public Health Service, Atlanta, Ga.*

This mimeographed document represents a summary of the proceedings of the first State and Territorial Health Officers' Conference at the Communicable Disease Center in Atlanta, Ga., October 17–18, 1949. As the foreword indicates, the Conference was organized around a series of ten panel discussions featuring questions and topics in the field of communicable disease control suggested by those in attendance.

Excellent digests of up-to-date information are provided on the subjects of morbidity reporting, tuberculosis, viral diseases, amebiasis, diphtheria, rabies, brucellosis, salmonellosis, and streptococcal infections.

The staff of the C.D.C. and the Public Health Service are to be congratulated on this digested report. This is a gold mine of information.

REGINALD M. ATWATER

Federal Food, Drug and Cosmetic Act, Judicial and Administrative Record, 1938–1949—*By Vincent A. Kleinfeld and Charles Wesley Dunn. New York: Commerce Clearing House,* 1949. 895 pp. Price, $17.50.

The words of the co-author of this book, "This is a reference book needed by all who deal with this Act, and one which has a permanent value to all interested in it," can be reiterated by this reviewer. Divided into three portions, the book includes (1) legal opinions; (2) official correspondence and statements of general policy; and (3) references to material concerning the Federal Food, Drug and Cosmetic Act of 1938.

Concerning the first portion of the book there are over 250 pages of opinions regarding seizure cases, 130 pages concerning criminal cases, 48 pages of review cases, 34 relating to injunctions, and 84 pertaining to miscellaneous cases. These opinions could be located in Notices of Judgment and the Commerce Clearing House Food, Drug, Cosmetic Law Reports and the jurisdictional law reporters. However, assembled in one volume here makes for convenience.

The second portion consists of "Trade Correspondence" and "Statements of General Policy or Interpretations," issued by the Food and Drug Administration on a great variety of items from agar-agar in candy to the labelling of x-ray apparatus, and "Zucca" melon—use in fruit cake, not in alphabetical order however. It is exceedingly enlightening to read of the scope of this act. This portion requires over 190 pages.

The third portion of this book lists each sub-section of the Act: (1) references to the applicable regulations; (2) citations to all relevant cases decided under the Food and Drug Act of 1906; (3) citations under this Act; (4) citations to pertinent decisions rendered under the Federal Trade Commission; (5) citations to pertinent opinions of the Attorney General; and (6) citations to the Trade Correspondence and Statements of General Policy or Interpretation which deal with the sub-section.

For those who are engaged in the enforcement of food and drug laws, regardless of the level, federal, county, state or city, or the agency affiliation—agriculture, pharmacy, or public health,

this excellently bound, compact and well indexed book is recommended.

FERDINAND A. KORFF

Cancer Nursing. A Manual for Public Health Nurses—*A Joint Project of the National Cancer Institute, Public Health Service, Federal Security Agency and the New York State Department of Health. For sale outside of New York by Health Publications Institute, Inc., Raleigh, N. C.,* 1950. 88 pp. Price, $1.00 per single copy, $80.00 per hundred, $750.00 per thousand.

This long awaited and much needed manual was written by Margaret Knapp, Nurse Officer of the National Cancer Institute, with the collaboration of the staff members of the Public Health Service and the New York State Department of Health. It is an authoritative and sound presentation of the information which public health nurses must possess about cancer, its control, treatment, and nursing care at all stages. It is by far the most detailed and yet simple explanation of nursing responsibilities throughout the course of cancer ever published, well illustrated, and beautifully printed. An appendix giving suggestions for special diets completes a booklet that every nurse will welcome with professional satisfaction and pride. This is a "must." A book-of-the-month to be owned by every office as well as every individual nurse.

DOROTHY DEMING

Laboratory Manual and Work Book in the Microbiology of Foods—*By Fred W. Tanner. Champaign, Ill.: Garrard Press,* 1950. Price, $4.75.

This book is a compilation of practically all of the accepted methods for the microbiological examination of water, milk, and all other kinds of foods, and of the equipment employed in the handling and serving of food. Both standard and tentative methods are included. Few, if any, accepted procedures are missing; certainly, the important ones are all there. Included, also, are laws and regulations for the sanitary control of foods, common yeasts and molds, and illustrations to help the student to understand unfamiliar apparatus. Sound training in introductory bacteriology is assumed.

More material is included than can be covered in an average college course, but this is not a fault in the book, which serves the very useful purpose of bringing together in one volume numbers of methods which previously have been available only in a number of publications. It will be useful not only for instruction but also for service bacteriologists and in research. Printing is done by the photo-offset process. Some material reprinted from other publications appears in original type, while the author's material was composed on a varitype machine. The reviewer found some of the latter crowded and a bit trying to read. This, however, is a minor criticism. The book is unbound and the pages are punched to be included, if desired, with laboratory notes in a three ring notebook or binder.

JAMES E. FULLER

The Road to Health—*(6 Vols.) Edwina Jones, Edna Morgan, Paul E. Landis, and Charles F. Good. Chicago: Laidlow Brothers,* 1949.

Prices:

Grade One	96 pp.	$1.00
Grade Two	127 pp.	1.16
Grade Three	160 pp.	1.28
Grade Four	256 pp.	1.48
Grade Five	320 pp.	1.60
Grade Six	320 pp.	1.60

This quartet of well known Ohio educators has produced one of the most beautifully illustrated of the recent series of health readers for the elementary grades. There is a book for each year and they are, of course, graded in difficulty, comprehension, and vocabu-

lary so that they will remain appealing at each level. The coverage of health material is exceptionally extensive and the authors have employed a unique style of mixing fantasy with realism, employing stories freely to spice up otherwise dull aspects of living the hygienic life.

In the books for the intermediate grades the authors have included well selected exercises and activities for students to do, and there are helpful suggestions for teachers scattered throughout the series.

The volumes should prove popular in elementary schools where health education is dealt with directly and with a specific curriculum emphasis. The material at each level is well chosen and both scientifically and educationally significant.

DELBERT OBERTEUFFER

Problems in the Collection and Comparability of International Statistics—*New York: Milbank Memorial Fund,* 1949. 165 pp. Price, $.50.

This interesting volume is a collection of 11 papers by various authors presented at the 1948 Conference of the Milbank Memorial Fund. After the initial paper summarizing the development of international statistics from the time of Quetelet and Albert of Belgium down to the present, the remaining papers are concerned with problems encountered in the development of various specific kinds of international statistics. There are two papers concerned with population and demographic statistics and these are followed by a most interesting discussion of "Cultural Differences and Census Concepts." The remaining papers are concerned with migration statistics, world health statistics, the sixth revision of the *International List of Diseases, Injuries and Causes of Death,* statistics of food and agriculture, labor statistics, and statistics of the distribution of family incomes by size. The final paper is a "General Assessment of International Statistics and Outlook for the Future."

The fact that the Milbank Memorial Fund has found it desirable to hold a round table on the questions of international statistics is indicative of the thought being given to these problems in many areas. As is pointed out in the last paper (William R. Leonard) there is a real desire on the part of national governments to provide national statistics where they do not now exist and to improve national statistics where they are now less than adequate. The real hope for comparability in national statistics lies in the establishment and improvement of national systems.

It has been said that one of the roles of statistics is to aid in the quantitative definition of problems. There is evidence in this small volume that in the international field a start has been made toward such definition. The volume should be of interest to the statistical minded as an example of a method of approach to complex problems. It is also worth the time of the general reader as a means of gaining understanding of some of the problems attendant upon any attempt to understand the international scene.

PAUL M. DENSEN

Public Health Is People—*By Ethel L. Ginsburg. New York: Commonwealth Fund,* 1950. 241 pp. Price, $1.75.

Here is an exceedingly interesting, readable and useful account of a rich learning experience in everyday problems of public health practice. It is a particularly welcome volume for most of us who are groping to understand mental hygiene and its relation to public health. It is a very well written report of the Institute on Mental Health in Public Health held at Berkeley in 1948, attended by 30 health officers and a "faculty" of 16. Much of the language is that of health officer participants and

the situations discussed are those which we encounter daily in local health activities, in clinics, home visits, and in the job of being a successful health officer. It is clear that no text is a substitute for the meaningful participation in such a conference, but the first thirty pages of this book will give the reader a feeling of being present and will certainly provide a potent stimulus to seek the opportunity to attend a similar one. A substantial portion of the report reviews the content of the institute and the process whereby the health officers and psychiatrists learned the full significance of the concept that public health is people. The book is short, inexpensive, enjoyable and worth while, and is recommended for early reading.

ROSCOE P. KANDLE

The Sociology of the Patient—*By Earl Lomon Koos. New York: McGraw-Hill,* 1950. 264 pp. Price, $3.00.

The concept of teaching sociology to first year student nurses in terms of patients with social and psychological relationships that affect their illness is a novel one. Dr. Koos attempts it in this sociology text. There are many teaching aids: questions, bibliographical references at the end of each chapter, summaries at the end of each of the three sections; glossary, reading list, supplementary projects, outline for studying the patient and his family, list of visual aids at the end of the book; graphs and charts scattered throughout the book. It is all made so painless and simple one is half way through section one, "The Individual Patient," when one begins to wonder how much a student nurse would grasp of the tremendous field in time and effort that sociology comprises.

Part two, "The Patient and His Groups," including chapters on family, school, neighborhood, types of communities, races, is meaningful, well written, and most interesting.

Part three, which includes material on public health, welfare, hospital facilities, medical care, and administration, would benefit by a public health person's scrutiny. Little inadequacies such as "vaccinations and antitoxins," "diabetes, cardiac, cancer," "present development of penicillin and other specifics," a maternity rate with no location named, these are examples that could be given in brief.

The last chapter, "The Patient's Social Interaction," is fine indeed. With a few changes and corrections, this will be an excellent textbook for those who are not among the fortunate ones who can attend Dr. Koos's sociology lectures.

PAULINE BAND HIRSCH

BOOKS RECEIVED

Listing in this column acknowledges the receipt of books and our appreciation to the senders. Space and the interests of readers will permit review of some, but not all, of the books listed.

AIDS TO PUBLIC HEALTH (6th ed.) Llywelyn Roberts. Baltimore: Williams & Wilkins, 1950. 304 pp. Price, $2.00.

AMERICAN DENTAL ASSOCIATION, TRANSACTIONS OF THE. 90th Annual Session, San Francisco, Calif., October 17–20, 1949. Chicago: American Dental Association.

AMERICAN YEAR BOOK 1949. Edited by William M. Schuyler. New York: Nelson, 1950. 861 pp. Price, $15.00.

BIOLOGICAL FOUNDATIONS OF HEALTH EDUCATION. Proceedings of the Eastern States Health Education Conference, April 1–2, 1948. New York Academy of Medicine. New York: Columbia University Press, 1950. 169 pp. Price, $2.50.

COLOR PSYCHOLOGY AND COLOR THERAPY. Faber Birren. New York: McGraw-Hill, 1950. 284 pp. Price, $4.50.

COMMON GROUND IN FAMILY LIFE EDUCATION.

New York: American Social Hygiene Assn., 1950. 20 pp. Price, $.20.

COST ANALYSIS FOR PUBLIC HEALTH NURSING SERVICES. 104 pp. Price, $2.00 and The Study of Costs in Public Health Nursing. 78 pp. Price, $.75. New York: National Organization for Public Health Nursing, 1950.

CURRENT RESEARCH PROJECTS IN PUBLIC ADMINISTRATION, 1950. Chicago: Public Administration Service, 1950. 54 pp. Price, $1.00.

CYTOLOGIC DIAGNOSIS OF LUNG CANCER. Seymour M. Farber, Milton Rosenthal, Edwin F. Alston, Mortimer A. Benioff and Allen K. McGrath, Jr. Springfield, Ill.: Thomas, 1950. Unpaged. 60 illus. Price, $6.00.

DENTAL CARIES EXPERIENCE AMONG SELECTED POPULATION GROUPS IN THE STATE OF OREGON. Demetrios M. Hadjimarkos, Clara A. Storvick and June H. Sullivan. Corvallis, Ore.: Oregon State College. 47 pp.

EPIDEMIOLOGY IN COUNTRY PRACTICE (2nd ed.) William Norman Pickles. Baltimore: William & Wilkins, 1949. Price, $2.50.

FINGERS (TYPHOID FEVER). John M. Gibson. Chicago: American Medical Association, 1950. 7 pp. Price, $.15.

GENERAL REPORT OF THE PHARMACEUTAL SURVEY. 1946–1949. Washington: American Council on Education, 1950. 240 pp. Price, $6.00.

HEATING VENTILATING AIR CONDITIONING GUIDE 1950. New York: American Society of Heating and Ventilating Engineers, 1950. 1422 pp. Price, $7.50.

HOW TO TURN IDEAS INTO PICTURES. A Simple Method of Illustrating Publicity and Educational Materials. H. E. Kleinschmidt. New York: National Publicity Council, 1950. 32 pp. Price, $1.00.

HUMAN HEART, THE. Reprint of articles in the Washington Post. N. S. Haseltine. Bethesda, Md.: National Heart Institute, 1950. 22 pp. Single copy free.

INDUSTRIAL WASTES. 14th Annual Meeting. Pittsburgh, Pa.: Industrial Hygiene Foundation, 1949. 116 pp. Price, $2.00.

LOVE IS NOT ENOUGH. The Treatment of Emotionally Disturbed Children. Bruno Bettelheim. Glencoe, Ill.: The Free Press, 1950. 386 pp. Price, $4.50.

NATIONAL AIR POLLUTION SYMPOSIUM, PROCEEDINGS OF THE FIRST. 149 pp. Price, $2.50, and
Proceedings of the Second Annual Northern California Research Conference. 66 pp. Price, $2.00. Los Angeles, Calif.: Stanford Research Institute.

PARKINSON'S DISEASE. Walter Buchler. England: Mr. Walter Bughler, 101, Leeside Crescent, London, N.W. 11. Price, Paper $1.00, Cloth $2.00.

PHYSIOLOGY OF TISSUES AND ORGANS. Douglas H. K. Lee, Springfield, Ill.: Thomas, 1950. 159 pp. Price, $4.00.

PUBLIC WELFARE DIRECTORY 1950. Chicago: American Public Welfare Assn., 1950. 344 pp. Price, $5.00.

SEX. QUESTIONS AND ANSWERS. Fred Brown and Rudlof T. Kempton. New York: McGraw-Hill, 1950. 264 pp. Price, $2.95.

SEX WITHOUT FEAR. S. A. Lewin and John Gilmore. New York: Lear Publishers, 1950. 121 pp. Price, $3.00.

SEXUAL BEHAVIOR. How Shall We Define and Motivate What Is Acceptable? New York: American Social Hygiene Assn., 1950. 32 pp. Price, $.25.

SIMPLIFIED CHEMISTRY EXPERIMENTS. Armand Joseph Courchaine. New York: Putnam's, 1950. 234 pp. Price, $2.80.

SWIMMING POOL ANNUAL. DATA & REFERENCE (18th ed.). New York: Hoffman-Harris, 1950. 150 pp. Price, $3.00.

TEXTBOOK OF HEALTHFUL LIVING. (4th ed.). Harold S. Diehl, New York: McGraw-Hill, 1950. 776 pp. Price, $4.00.

YOU AND YOUR HEALTH. J. Roswell Gallagher. Chicago: Science Research Associates, 1950. 48 pp. Price, $.60.

VETERANS ADMINISTRATION TECHNICAL BULLETINS. Series 10. Vol. III. Washington, D. C.: Veterans Administration, 1949.

WORLD HEALTH ORGANIZATION, Official Records of the.
Report of the Executive Board. 93 pp. Price, $.75.
Report of the Director-General. 113 pp. Price, $.75.
Proposed Programme and Budget Estimates. 289 pp. Price, $1.50.
New York: Columbia University Press, 1950.

A SELECTED PUBLIC HEALTH BIBLIOGRAPHY WITH ANNOTATIONS

RAYMOND S. PATTERSON, PH.D.

A Nation's Health—Everyone in public health must be curious about annual communicable disease case tabulations, even though aware of the general sketchiness of morbidity reports. In 1949 polio was sky high, diphtheria lowest ever. The others had their ups and downs—venereal disease rates still astronomical, though lower.

ANON. Reported Incidence of Communicable Diseases in the United States, 1949. *Pub. Health Rep.* 65, 19:632 (May 12), 1950.

One for the Record—In a recent outbreak of smallpox in Glasgow several unvaccinated hospital people contracted the disease and died. More who had been vaccinated years earlier also came down with smallpox but recovered. Most of the issue of this British health officer's journal is taken up with philosophical discussions on the subject, moral-pointing letters to the editor, and Parliamentary badgerings.

ANON. Smallpox and Vaccination. *M. Officer* 83, 18:172 (May 6), 1950.

The Welfare Estate—Tribulations, hygienic, social, and sanitary, visited upon the authorities struggling with the management of London County Council's suburban housing "estates" are discussed in revealing detail. Apparently you can take a man out of the slums but you can't so easily take the slums out of the man.

BROWN, F. G., *et al.* Problems of New Housing Estates. *Pub. Health* 63, 7:126 (Apr.), 1950.

In a Nutshell—In only 2 out of 798 patients, with streptococcus infections and treated with penicillin, did rheumatic fever develop. In 804 patients not so treated, the disease developed in 17.

DENNY, F. W., *et al.* Prevention of Rheumatic Fever. *J.A.M.A.* 143, 2:151 (May 13), 1950.

Our Ideas Given a Going-over—A British M. O. H. and a laryngologist argue the pros and cons of tonsillectomies during polio epidemics. References to "long lists of children waiting for admission for tonsillectomy, which may have been advised months or even years before" point to one complication we do not face.

GLOVER, J. A., AND TAMPLIN, E. C. Poliomyelitis and Tonsillectomy. *Pub. Health* 63, 8:154 (May), 1950.

Schools Opened on Schedule—New York City's 1949 polio outbreak is given a minute epidemiologic examination and about all you will ever want to know concerning age, sex, color, family, and geographical distributions you will find here in illuminating detail.

GREENBERG, M., *et al.* Poliomyelitis in New York City, 1949. *New York State J. Med.* 50, 9:119 (May 1), 1950.

This Is Public Health—Typical of a rash of recent papers (in general and regional medical journals) all reporting that antihistaminics do not do what the advertisers promise, are these conclusions from a carefully controlled study. Placebos "cured" 27 per cent of patients with head colds. Similar proportions of "cures" were achieved by antihistaminics. Though these drugs may decrease the nasal discharges in the early stages, the variability of symptoms makes positive conclusions difficult even in that area.

HOAGLAND, R. J., *et al.* Antihistaminic

Drugs for Colds. *J.A.M.A.* 143, 2:157 (May 13), 1950.

Ask the Forty-six—In a network of Maryland cancer detection centers, 8,152 presumably well persons were examined. Cancer was found in 46 and 3,792 had other pathologic conditions (10 per cent of them "serious"). The cost was about $16 per examinee. You will be interested in the arguments over the question: is the cost justified?

JONES, H. W., JR., AND CAMERON, W. R. An Appraisal of Cancer Detection Centers. *J.A.M.A.* 143, 3:228 (May 20), 1950.

Mens Sana, Etc., Etc.—Our growing concern that mental hygiene shall contribute all it can to public health, lends weight to this lively symposium on the possible roles of the several professions. A pediatrician, a nurse, a social worker, a teacher, a religious director, and a lawyer take part.

LANGFORD, W. S., *et al.* The Professional Person—A Mental-Hygiene Resource. *Ment. Hyg.* 34, 2:262 (Apr.), 1950.

Still Seems Complicated—Laboratory procedures for the diagnosis of virus and rickettsial infections (both complement-fixation and hemagglutination inhibition tests) have been developed to the point that they can be carried out without highly trained, "research" level personnel, this writer maintains.

MILZER, A. Routine Laboratory Diagnosis of Virus and Rickettsial Diseases. *J.A.M.A.* 143, 3:219 (May 20), 1950.

Existing Facilities—Here is one solution for the chronic disease problem: it is proposed that (in N. Y.) the State Department's Tuberculosis Division become the Division of Chronic Diseases, and that existing sanatoria become hospitals for other chronic patients as well as the tuberculous.

SCHWARTZ, H. F. The Chronic Disease Problem. *New York State J. Med.* 50, 10: 1255 (May 15), 1950.

Praise from a Visitor—It really must be that distant fields are greener. The head man of the British health education council visited us and on his return he tells his confreres about the accomplishments in community organization that our health educational programs have achieved. We can only pray that some day soon we may merit this still undeserved commendation. Just one quote—"In America, health educators are professionals: in Britain they mostly retain their amateur status!"

SUTHERLAND, R. Health Education in Practice. *Health Ed. J.* (British) 8, 2:70 (Apr.), 1950.

"Shared Atmospheres" and "Subthreshold Ventilation"—Two comparable Westchester County towns were chosen. In one town all places where school-age kids might gather—except Christian Science meeting rooms—were irradiated. The other town went without benefit of ultra-violet air disinfection. The question was: will air irradiation prevent the spread of measles and chickenpox? The findings become too involved for this enfeebled brain to follow (the first sentence of "conclusions" is composed of 81 words), but results must be promising because more protected villages are to be included in the continuing study.

WELLS, M. W., AND HOLLA, W. A. Ventilation in the Flow of Measles and Chickenpox through a Community. *J.A.M.A.* 142, 17: 1337 (Apr. 29), 1950.

School Health—Who shall be director of school health? This paper is an unemotional, analytic, and eminently practical answer to the question. It, and the two following parts of the Symposium on "Adequate School Health Personnel," should be of interest to most of us.

WILSON, C. C. Directors of School Health Departments. *J. School Health.* 20, 5:125 (May), 1950.

ASSOCIATION NEWS

SEVENTY-EIGHTH ANNUAL MEETING
AMERICAN PUBLIC HEALTH ASSOCIATION
ST. LOUIS, MO., OCTOBER 30–NOVEMBER 3, 1950

FELLOWSHIP IN THE AMERICAN PUBLIC HEALTH ASSOCIATION

The grade of Fellowship was established in the American Public Health Association in 1922. Professional workers in public health are eligible for election as Fellows under certain conditions and as an indication that they have achieved a recognized professional standing. As of January 1, 1950, the total membership of the Association was 11,561, including 2,255 Fellows, or 19 per cent of the total.

Questions are frequentliy asked regarding the requirements for Fellowship and the following statement outlines the provisions of the By-laws governing qualification and election.

Persons who have been members of the Association for at least two years and who have reached their 30th birthday are eligible to apply if, in their opinion, they meet the conditions of one or more of the six clauses in the By-laws defining "an established professional standing." These six possible approaches are as follows:

a. A person who has rendered acceptable service for two or more years in a responsible public health position and who has been awarded in course a degree of Doctor of Public Health, Doctor of Science in Public Health, Doctor of Philosophy in Public Health, Doctor of Medicine, with at least one year of graduate study in public health in a university, Master of Public Health, Diploma in Public Health, or other equivalent degrees, according to standards approved by the Executive Board of the American Public Health Association.

b. A person who has been awarded in course an academic or professional degree involving training in public health and who has been regularly engaged in health work for at least five years, having rendered meritorious service as a health officer or in responsible charge of work in either a public or private health agency.

c. A person who has done notable original work in public health or preventive medicine of a character to give him a recognized standing.

d. A person regularly engaged in health work for at least five years, who has given evidence of special proficiency, who has attained a recognized standing.

e. A teacher of public health or one of its constituent sciences who has attained distinction as an expounder of the principles of public health or its constituent sciences. Such a teacher shall have had at least five years' experience as a teacher of public health subjects. Any years of experience as defined in paragraphs "b" and "d" that the applicant may have had shall be considered the equivalent of the same number of years' experience as a "teacher."

f. A person not covered by the above, who has made substantial contributions to public health work in his chosen branch, who has attained a recognized professional standing.

Persons wishing to apply should request a Fellowship application blank from the American Public Health Association Membership Department, 1790 Broadway, New York 19, N. Y. Applications are accepted up to August 1 each year for consideration by the Governing Council at the fall meeting. It is important to make clear that mem-

bers themselves should take the initiative in submitting such applications. Neither the Sections nor the A.P.H.A. administrative staff are authorized to solicit applications. This means that, although over 3,000 persons have been duly recognized with this grade of affiliation since 1922, there are other persons well qualified who have never initiated the process of applying for Fellowships. It should be clear that members should not await action by others if they wish to attain Fellowship. It is necessary and proper for them to take the first step.

An application for Fellowship requires sponsorship by two Fellows of the Section with which the applicant desires to be affiliated. These personal signatures are to be obtained by the applicant before submitting the completed application. The A.P.H.A. office will assist, on request, in determining the Section with which prospective sponsors are affiliated. Applications from persons not wishing to be identified with a particular Section and requesting unaffiliated Fellowship may be sponsored by any two Fellows of the Association.

When properly sponsored and otherwise completed, the application is sent to the A.P.H.A. office, after which the list of persons applying is published in the *American Journal of Public Health*, usually in the September issue, but in any case not less than 15 days before the date for the Annual Meeting. An established routine is followed for review by the Section Councils (unaffiliated applications are reviewed by the Executive Board) and by the Committee on Eligibility. This Standing Committee of the Association is made up of one Fellow from each of the 13 Sections, plus a Chairman elected by the Executive Board. This group is under instructions from the Governing Council to examine each application in accordance with the provisions of the clause of the By-laws chosen by the applicant, and to apply the criteria with precision in each case. Final election is by the Governing Council at the second meeting at each annual session.

The privileges of Fellowship include eligibility to serve as an officer of the Association or one of the Sections, Chairman of an Association or Section Committee (over one hundred in number), a member of one of the four Standing Committees, a member of the Governing Council or Executive Board, and the right to vote for the elective members of the Governing Council and on amendments to the Constitution. Some Civil Service and merit system records depend upon Fellowship in the American Public Health Association as an achievement deserving recognition in applicants.

The dues of Fellows are $12.00 annually, and include a subscription to the *American Journal of Public Health* and other services to which members are eligible. Life membership is available at $200, covering all future annual dues.

Applications for Fellowships to be considered at the 78th Annual Meeting in St. Louis, Missouri, October 30–November 3, should be filed with the Association as soon as they are completed, and in any case not later than August 1. For further information, address the Membership Department, American Public Health Association.

THE 78TH ANNUAL MEETING

St. Louis, Mo., Oct. 30–Nov. 3, 1950

Hotel Reservation Form

The hotels listed below have rooms available for Association delegates at the rates indicated. Please note that no RESERVATIONS WILL BE ACCEPTED DIRECTLY BY HOTELS. Make your reservations through: *HOTELS CONVENTION RESERVATION BUREAU, A.P.H.A., Room 406, 911 Locust St., St. Louis 1, Mo.*

Hotel	*Single Rooms*	*Double Rooms*		*2 Room Suites*
		Double Bed	*Twin Beds*	*Parlor & Bedroom*
American	$2.75–$4.00	$3.50–$5.00	$4.00–$5.00	$8.00
Baltimore	2.75– 3.50	3.75– 4.50	4.00– 5.00	
Broadview	3.00– 6.00	4.50– 7.00	6.00– 8.00	12.00–18.00
Chase	4.00– 8.00	6.00– 8.00	6.00–10.00	10.00–35.00
Claridge	3.25– 4.75	5.00– 7.50	5.50– 7.50	12.00 & up
Congress	4.50– 6.00	6.50– 8.00	6.50– 8.00	12.00–15.00
De Soto	3.50– 5.00	5.50– 8.00	7.00–13.00	12.00–20.00
Forest Park	3.50– 5.00	5.00– 7.00	6.50 & up	10.00 & up
Gatesworth	4.00 & up	5.00 & up	5.00 & up	10.00 & up
Jefferson	4.50– 6.50	6.00– 8.00	7.50– 8.50	12.00–22.50
Kingsway	3.00– 4.00	4.50– 7.00	6.50– 7.00	
Lennox	3.75– 6.00	5.25– 8.00	6.50– 8.00	11.00 & up
Majestic	3.00– 5.00	4.00– 6.00	6.00– 8.00	
Mark Twain	3.25– 5.00	5.00– 7.00	6.50– 7.00	
Mayfair	3.50– 8.50	7.00–10.00	8.00–10.00	12.00–20.00
Melbourne	4.00– 6.00	5.00– 7.50	6.50– 8.00	12.00 & up
Park Plaza	5.00– 9.00	6.00–10.00	7.35–11.00	9.00–30.00
Roosevelt	3.50– 5.00	5.25– 8.50	7.50–12.00	16.50–19.50
Sheraton	4.00– 6.00	3.80– 5.00	6.00	
Statler	3.75– 6.50	4.50– 5.00	5.50– 7.00	
Warwick	2.75– 3.25	5.00– 9.50	7.00 & up	14.00 & up
York	3.00– 4.00	6.00– 8.00	7.00– 9.00	12.00–17.00

Single Rooms are limited; share a twin bedded room with a fellow delegate. Be sure to use the form below giving the Hotels Convention Reservation Bureau the complete information asked for. This will eliminate unnecessary correspondence for you and the Bureau. All reservations will be acknowledged by the Bureau; and confirmed by the Hotel to which you have been assigned by September 1.

ALL RESERVATIONS MUST BE RECEIVED PRIOR TO: September 18, 1950

Hotels Convention Reservation Bureau, A.P.H.A.
Room 406 — 911 Locust St.,
St. Louis 1, Mo.

Please make hotel reservation as indicated below:

First Choice ..... **Second Choice** ..... **Third Choice** .....
(Be sure to give three choices of hotels)
Single Room ..... **Double Bedroom** ..... **Twin Bedded Room** .....
2 Room Suite ..... **Other Type Room** .....
Rate from: $..... **to $**.....
The name(s) of the occupant(s) of the room will be: .....
.....
.....
Arrival at Hotel ..... **hour** ..... **A.M.** ..... **P.M.** .....
(date)
Departure ..... **hour** ..... **A.M.** ..... **P.M.** .....
(date)

***PLEASE NOTE*: Hotel accommodations will be held until 6:00 p.m.; later if deposit is made with notification.**

Name .....
(Individual Requesting Reservation(s))
Address .....
City and State .....

If the hotels of your choice are unable to accept your reservation the Hotels Convention Reservation Bureau will make as good a reservation as possible elsewhere providing that all hotel rooms available have not already been taken.

ADVANCE REGISTRATION

FOR 78TH ANNUAL MEETING

AMERICAN PUBLIC HEALTH ASSOCIATION

ST. LOUIS, MO., OCTOBER 30–NOVEMBER 3, 1950

Members and Fellows of the American Public Health Association and other health workers who are not members who wish to register in advance for the St. Louis Annual Meeting are cordially invited to do so.

Each person should fill in the coupon below or a facsimile thereof and mail it with the registration fee to the Central Office. We will prepare for your attendance in advance and you can then pick up your program and badge without delay at a special section as soon as you arrive at Registration Headquarters in the Kiel Auditorium. At that time your registration will have been recorded and it will only be necessary for you to supply your local hotel and room number to complete the registration procedure. If you know now at which hotel in St. Louis you will be staying, please add this information below.

Return to AMERICAN PUBLIC HEALTH ASSOCIATION, INC.
1790 Broadway, New York 19, N. Y.

I wish to register in advance for the St. Louis Annual Meeting.

NAME .....

BUSINESS ADDRESS .....

CITY & STATE .....

TITLE OF POSITION .....

HOTEL IN ST. LOUIS .....

Non-member of A.P.H.A. Registration fee $4. ☐

Member of A.P.H.A. Registration fee $3. ☐

Fellow of A.P.H.A. Registration fee $3. ☐

Please send check or money order for amount shown

If you will be accompanied by your wife (or husband) or other dependent member of your family who is entitled to free registration, please list the name and address below:

NAME ..... RELATIONSHIP TO DELEGATE .....

STREET ADDRESS ..... CITY & STATE .....

DR. SHEPARD AND THE C.P.E.

Dr. William P. Shepard assumed the Chairmanship of the Committee on Professional Education in 1940 (succeeding Dr. W. S. Leathers, the first head of that committee). His retirement from this post after 10 years of service makes it appropriate for the Executive Board and the C.P.E.,* to take official note of a decade of outstanding leadership, for which the American Public Health Association and the profession as a whole owes to Dr. Shepard an enduring debt.

The work of the C.P.E. during the past 10 years, under Dr. Shepard's guidance, has been characterized by breadth and clarity of vision and—as we look at it in retrospect—by a logical recognition of the problems involved and a rounded and balanced approach which is so essential for sound social planning.

The basis for the entire program is, of course, a definition of the specific types of personnel required to meet the complex demands of modern public health. Under the Chairmanship of Dr. Leathers, the committee had already adopted statements of desirable educational qualifications for four types of professional personnel; and since 1940 13 new reports have been issued on 11 occupational groups. Almost 50,000 of these reports have been distributed and the demand is rising annually.

The appointment of qualified personnel depends on an adequate process of selection. Therefore (at Dr. Shepard's first meeting with the committee) steps were taken from which developed a Merit System Service of which we may well be proud. The unit has now an operating budget of some $87,000. It has prepared an admirable series of examinations for 16 different fields of public health which have been used by 40 states. Over 800 examinations have been prepared with a total of more than 35,000 questions.

The third concern of the committee was in the basic educational system which provides the men and women to take merit system examinations and fulfil prescribed qualifications. In 1945 the committee established its program for the accreditation of schools of public health which has proved of vital importance in stabilizing the education of public health workers at a true university level.

As a link between the school and the health department, the committee established (also in 1945) a vocational counseling and placement service which deals patiently and constructively with the small numbers of candidates for positions and the much larger number of demands for such candidates.

To increase the inadequate supply of public health workers, the conditions of employment must be made more attractive. In 1946, a special subcommittee on salaries was appointed which has actively stimulated studies by the U.S.P.H.S. and has led to official A.P.H.A. recommendations on salaries for public health physicians, a policy to be later extended to other fields. Another step in making a public health career more attractive was the establishment in 1949 of an American Board of Preventive Medicine and Public Health which gives official recognition to medical public health as a specialty of medicine. Plans for this were worked out jointly by the A.M.A. and the A.P.H.A., and Dr. Shepard has been the active center of the enterprise and is Chairman of the Examination Committee of the new board. As a part of the Specialty Board program, the subject of accreditation of field training areas for public health workers (declared necessary by the C.P.E. in 1944) has once more come to the fore and a pro-

* This statement of appreciation to Dr. Shepard was unanimously adopted by the Executive Board on May 15, and by the C.P.E. on May 19, 1950.

gram of this kind is now very actively carried forward as one of the major projects of the C.P.E.

Thanks to the C.P.E., we now have qualifications for various types of public health workers, merit system examinations to determine such qualifications, 10 accredited schools of public health, and an efficient vocational counseling and placement service. We have made a good beginning at the establishment of essential salary levels and at the provision of field training facilities. The problem of today is to find the men and women to take the courses and to fill the posts.

Recruitment is the major challenge to American public health in 1950 and the C.P.E. in 1949 adopted a comprehensive program of recruitment which only awaits funds for its realization.

This is truly an outstanding achievement for one decade of progress and for that progress we desire to make record of our warm and admiring gratitude to Dr. Shepard for the untiring labor and farsighted vision which have made such results possible. The motto which he presented to us in one of his annual reports was "Public health is only as successful as the people in it." It is "the people in" the C.P.E. who in one decade have carried the profession of public health to levels which no one of us could have visualized in 1940, and it is—above all—Dr. Shepard, its Chairman during the past decade, to whom we owe heartfelt thanks.

AFFILIATED SOCIETY NEWS

Texas—At an Annual Meeting held in Galveston, February 19–22, the Texas Public Health Association elected the following officers:

President—B. A. Young, State Health Dept., Austin
President-Elect—Graham Smoot, State Health Dept., Austin
First Vice-President—H. E. Drumwright, City Health Dept., Dallas
Second Vice-President—Elvira Oetken, San Antonio
Executive Secretary—Earle W. Sudderth, Dallas County Health Dept., Dallas

The T.P.H.A. plans to hold its 1951 Annual Meeting in San Antonio during the month of February.

Southern California—The 1950 officers of the Southern California Public Health Association are as follows:

President—William C. Buss, M.D., Kern County Health Officer, Bakersfield
President-Elect—Charles L. Senn, Director, Sanitation Bureau, Los Angeles City Health Dept., Los Angeles
First Vice-President—Ellarene L. MacCoy, M.D., Medical Consultant, State Department of Education, Los Angeles
Second Vice-President—J. B. Askew, M.D., San Diego City and County Health Officer, San Diego
Secretary-Treasurer—Mary B. Dale, M.D., Epidemiologist, Los Angeles County Health Dept., Los Angeles
Assistant Secretary-Treasurer—Miriam Hubbell, M.D., San Fernando District Health Officer, San Fernando

The spring meeting of the S.C.P.H.A. was held in Bakersfield on May 12.

Arizona—The Twentieth Annual Meeting of the Arizona Public Health Association was held April 20–21 at Safford. The sessions were conducted on a workshop plan and the theme of the meeting was "Public Health and Arizona's Economy."

Harald M. Graning, M.D., of the Public Health Service, spoke on "Public Health—1950."

C. E. Reddick, M.D., Director of Local Health Administration, State Health Department, succeeded Marion Sprague as President of the association. Roy N. Jones, Supervisor, Phoenix Health Department, was elected President-Elect, and Helene T. Bennett of Thomas Laboratories, Yuma, was elected

Vice-President. The new Treasurer is Beatrice Ezell, and the new Secretary, Virginia Hafner, of the State Health Department.

Kansas—The 8th Annual Meeting of the Kansas Public Health Association was held jointly with the Missouri Public Health Association in Kansas City, Mo., April 24–26. The newly elected officers of the Kansas society are as follows:

President—Vernon M. Winkle, M.D., Director, Kansas City-Wyandotte County Health Dept., Kansas City

President-Elect—Lewis W. Andrews, Director of Health Education, Wichita-Sedgwick County Health Dept., Wichita

Vice-President—Theresa Jenniges, R.N., Director of Public Health Nursing Services, State Board of Health, Topeka

Secretary-Treasurer—Evelyn Ford, Records Consultant, State Board of Health, Topeka

West Virginia—The 1950 Annual Meeting of the West Virginia Public Health Association was held in connection with the 26th Annual State Health Conference in Wheeling, May 4 and 5. General session speakers included Haven Emerson, M.D., L. E. Burney, M.D., Albert Bailey, Ph.D., and Blanche R. Miller, R.N. At this time the following officers were elected:

President—Olive Snyder, Fairmont

First Vice-President—A. Glenn Evans, M.D., Fairmont

Second Vice-President—Lester S. Kyle, Charleston

Treasurer—Katherine Jones, Charleston

Annette King of the State Health Department is Secretary of this society.

APPLICANTS FOR MEMBERSHIP

The following individuals have applied for membership in the Association. They have requested affiliation with the sections indicated.

Health Officers Section

Raul Alee-Galaz, M.D., P. O. Box 9183, Santiago, Chile, S. A., Chief, Chagas Disease Research, Dept. of Parasitology, Chilean Public Health Service

George H. Ball, M.B., Sh.B., D.P.H., Box 380, High River, Alberta, Canada, Medical Officer of Health, Foothills Health District

William Jordan Brown, M.D., P. O. Box 3027, Avondale Station, Birmingham, Ala., Medical Officer in Charge, Mid-South Medical Center, USPHS

Hiram J. Bush, M.D., U. S. Quarantine Station, P. O. Box 1438, Tampa 1, Fla., Medical Officer in Charge, USPHS

Stephen F. Carr, M.D., Jones County Health Dept., Laurel, Miss., Director

Charles G. Dobrovolny, Ph.D., Apartado 383, Guatemala, Guatemala, C. A., Senior Scientist, USPHS, Chief Malaria Project

Arvid Evjen, M.D., M.P.H., Fougstad gt. 7, oppg. i, Oslo, Norway, Public Health Officer, Norwegian Health Dept.

Andrew C. Fleck, Jr., M.D., 821 Seventh Ave., Troy, N. Y., Physician-in-training, Johns Hopkins University, School of Hygiene and Public Health

R. C. Fraser, M.D., C.M., Holmes County Health Dept., Lexington, Miss., Director

Captain James F. Hooker, M.C., U.S.N., N. S. Naval Hospital, Camp Lejeune, N. C., Commanding Officer

Leonard M. Kahl, M.D., 379 Commercial St., Astoria, Ore., Health Officer, Clatsop County Health Dept.

Bernhard Klaess, M.D., Espan St. 78, Fuerth, Bavaria, Germany, Medical Adviser, Government Department-Ansbach

Fredrik Mellbye, M.D., Helse Jirektoratet, Suhms Gate 23b, Oslo, Norway, Asst. Director, Division of Epidemiology and Hygiene, Royal Norwegian Ministry of Social Affairs

James W. Nunn, M.D., Board of Health, 24 Gerald, Highland Park 3, Mich., Health Officer

Emilio Pelaez, M.D., 517 Comercio, LaPaz, Bolivia, S. A., Student, Harvard Univ., School of Public Health

Erwin S. Rabeau, M.D., Ans Hospital, Kotzebue, Alaska, Senior Assistant Surgeon(R), USPHS, Medical Officer in Charge

Renato M. Royo, M.D., Box 2005, Ponce, Puerto Rico, Public Health Physician, Puerto Rican Dept. of Health

Pedro Nel Saavedra, M.D., 1452 Washington

Heights, Ann Arbor, Mich., Post-graduate student, Univ. of Michigan, School of Public Health

Howard F. Smith, M.D., U. S. Embassy, Manila, APO 736, PM, San Francisco, Calif., Assistant Surgeon General, USPHS

Kendrick Taylor, M.D., Rapides Parish Health Unit, Alexandria, La., Public Health Physician III, State Dept. of Health

Laboratory Section

Konrad E. Birkhaug, M.D., 164 Colonial Ave., Albany 3, N. Y., Principal Medical Bacteriologist and Director of BCG Laboratory, State Dept. of Health

Shelly A. Byers, 982 Buchanan St., Albany 6, Calif., Associate in Public Health, School of Public Health, Univ. of California

Nick Chiotras, 272 Coventry Road, Berkeley 7, Calif., Associate in Public Health, School of Public Health, Univ. of California Campus

Ruth L. Golding, M.S.P.H., 202 Groveland Ave., Raleigh, N. C., Technician, research in Animal Husbandry, Dept. of Agriculture

Theodore M. Hawkins, 1246 Berkeley Way, Berkeley 2, Calif., Bacteriologist Trainee, State Public Health Lab.

George T. Lewis, Ph.D., Emory University, Georgia, Professor of Biochemistry

Robert W. Mowry, M.D., National Institutes of Health, Bethesda, Md., Research in Pathology and Human Diagnostic Pathology, Regular Corps, USPHS

Charles E. Pegg, Jr., D.V.M., Kanto Civil Affairs Region, APO 500, PM, San Francisco, Calif., Veterinarian

Louise F. Potter, Ph.D., Vassar College, Dept. of Plant Science, Poughkeepsie, N. Y., Instructor

Frank A. Simonelli, M.D., Univ. of Mississippi, School of Medicine, University, Miss., Asst. Professor of Bacteriology and Clinical Laboratory Diagnosis

Statistics Section

H. Husni Jalloul, M.D., Ministry of Health, Beirut, Lebanon, Student, Harvard School of Public Health

Walter Boyd Stovall, Jr., M.A., Box 4526, Jacksonville 1, Fla., Statistician II, Florida State Board of Health

William E. Straw, Sr., 503 East Westmoreland Road, Falls Church, Va., Statistician, Navy Bureau, M & S Medical Statistics Division

Engineering Section

William F. Bower, 300 N.E. 60th Ave., Apt. 24, Portland 15, Ore., Sanitarian, Oregon State Board of Health

Robert P. Burden, Sc.D., 20 Rue de la Baume, Paris 8c, France, Sanitary Engineer, International Health Division, The Rockefeller Foundation

Byron W. Candage, C.E., ECA-Public Health Div., APO 206, PM, New York, N. Y., Hospital Construction Engineer

W. E. Childs, 1340 S. Knoxville St., Tulsa, Okla., Senior Sanitarian, City-County Health Dept.

Tracy I. Flagg, 275 Somerset Ave., Taunton, Mass., Student, Univ. of Massachusetts

James W. Fresh, 1515 9th Ave., Hickory, N. C., Student, Univ. of North Carolina, School of Public Health

C. E. Gabriel, 3228 E. 4th St., Tulsa, Okla., Sanitarian, Health Dept.

Richard P. Lonergan, M.P.H., USPHS, 14th & Lake St., San Francisco, Calif., Sanitary Engineer(R), Western C.D.C. Laboratory

Ralph K. Longaker, C.E., 2010 S. Westnedge, Kalamazoo, Mich., JA Sanitary Engineer, USPHS, Division of Sanitation

Herman W. Matheny, Tipton County Health Dept., Covington, Tenn., Rural Sanitarian, Tennessee Dept. of Public Health

Brother Joseph McCabe, M.C.E., Manhattan College, New York 63, N. Y., Teaching Sanitary Engineering Option in Civil Engineering Dept.

Roger Ollivier, F., International House, 500 Riverside Drive, New York, N. Y., Technical Staff Member, Dept. of Public Works, Public Water Supply System, Haiti

Ernest A. Philen, M.P.H., Health & Safety Division, TVA, Sheffield, Ala., Public Health Engineer, Tennessee Valley Authority

Arthur W. Reinhardt, M.P.H., Pier Bldg., Room 7, B Street, San Diego, Calif., Assoc. Sanitary Engineer, Calif. Dept. of Public Health

Robert M. Rodgers, Columbus Field Training Station, Box 229, Columbus, Ga., Instructor, Insect and Rodent Control, USPHS

John E. Van Amburgh, 336 W. 79th St., Seattle, Wash., Asst. Director of Sanitation, Seattle-King County Dept. of Public Health

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Jack W. Washkuhn, 895 Menlo Ave., Menlo Park, Calif., Graduate Student, Univ. of California

Food and Nutrition Section

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M. Elizabeth Heap, M.S., Box 210, Diabetes

Unit, Jacksonville, Fla., Nutritionist, USPHS

Katherine Der Koorkanian, 32 Blodget St., Manchester, N. H., Student, Simmons College

John K. McGregor, D.V.M., D.V.P.H., Ontario Veterinary College, Guelph, Ontario, Canada, Assoc. Professor of Parasitology

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Maternal and Child Health Section

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Public Health Education Section

Jose M. de Barros, M.D., Rua Mapuera 14, Sao Paulo, Brazil, S. A., Asst. Professor of Venerealogy and Leprology, School of Hygiene and Public Health, Univ. of Sao Paulo

Hinkitch I. Bell, Sanitation Dept., St. Michael, Barbados, British West Indies, Sanitary Inspector, Commissioner of Health

Lula Belle Highsmith, M.S.P.H., 832 Wake Forest Rd., Raleigh, N. C., Senior Health Educator, Tuberculosis Section, State Board of Health

Beatrice M. Horsey, M.A., Div. of Nursing Education, Univ. of North Dakota, Grand Forks, N. D., Director

Madelyn M. McIntosh, 34 Laurel St., East Weymouth, Mass., Health Nurse, Board of Health

C. E. Morris, 6704 8th St., N.E., Seattle, Wash., Field Representative, Washington Tuberculosis Assn.

Dorothy T. Ogden, 134 S. 12th St., Room 616, Lincoln 8, Neb., Exec. Secy., Lancaster County Tuberculosis Assn.

Lea Kairys Paltan, R.N., M.A., 107-28 127th St., Richmond Hill 19, N. Y., Instructor, New York Univ.

Ruth E. Scott, R.N., P. O. Box 3317, Myrtle Grove, Pensacola, Fla., X-ray technician, Clinic nurse, Tuberculosis Clinic, Excambia County Health Dept.

Robert J. Speak, 713½ Main, Stillwater, Okla., Exec. Secy., Payne County Tuberculosis Assn.

Jesse I. Thomas, Jr., M.S.P.H., Prairie View A & M College, Prairie View, Tex., Health Education Consultant

Public Health Nursing Section

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Anne Pacek, 180 Hillsdale St., Hillsdale, Mich., Staff Nurse, Branch Hillsdale District Health Dept.

Alma D. Petty, Jackson-Madison County Health Dept., Jackson, Tenn., Senior Public Health Nurse

Vada M. Price, 17 Division Extended, Jackson, Tenn., Junior Public Health Nurse, Jackson-Madison County Health Dept.

Corene Rowland, 104 Vine St., Camden, Tenn., Senior Public Health Nurse, Benton County Health Dept.

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Ivy M. Wadsworth, R.N., 8205 Euclid Ave., Cleveland 3, Ohio, Venereal Disease Supervisor, Asst. Director of Nurses, Cleveland Division of Health

Olive C. M. Wheeler, 73 Lighthouse Road, Scituate, Mass., Director of Nursing Service, Social Service League of Cohasset

Epidemiology Section

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Calvin S. Buchanan, 144 Erie Ave., Decatur, Ga., Epidemiologist(VD), Dept. of Public Health of Georgia

John C. Cutler, M.D., 85 Sutton Manor, New Rochelle, N. Y., Leader, World Health Organization Venereal Disease Demonstration Team, India

Lucius L. A. Moore, Jr., M.S., Dept. of Prev. Med. Bowman Gray, Medical School, Winston-Salem, N. C., Instructor

J. Harland Paul, M.D., M.P.H., 1233 Ardsley Road, Jacksonville 7, Fla., Field Representative, International Health Division, Rockefeller Foundation

George W. Post, M.D., Veterans Administration Hospital, Legion, Tex., Ward Surgeon

School Health Section

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Medical Care Section

Otis L. Anderson, M.D., 4000 Cathedral Ave., Washington, D. C., Assoc. Chief, Bureau of Medical Services, Public Health Service

Raymond A. Fleetwood, University Hospitals, Iowa City, Iowa, Student in Hospital Administration, Univ. of Toronto

Frederick E. Robin, Ph.D., 1416 F St., N.W., Washington 4, D. C., Education Director, Committee for the Nation's Health

Max M. Van Sandt, M.D., Navaho Medical Center, Fort Defiance, Ariz., Director of Hospital Services, Bureau of Indian Affairs

Stanley H. Wald, 21 Hancock Road, Brookline, Mass., Student, Harvard School of Public Health

David J. Zaugg, M.D., 4141 N. Clarendon Ave., Chicago 14, Ill., Senior Surgeon, Univ. of Chicago

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Wilbur C. Anderson, M.S., 3914 Frankford Ave., Baltimore 6, Md., Student, Johns Hopkins Univ., School of Public Health

Philip Gilbert, 146-16 Hillside Ave., Jamaica, New York, Asst. to the Director, Certified Blood Donor Service

James F. Maddux, M.D., 2200 Fidelity Bldg., Kansas City 6, Mo., Regional Psychiatric Consultant, USPHS

John E. Pipes, 3401 Wilson Ave., Lynchburg, Va., Student, Univ. of North Carolina

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FIELD TRAINING ACCREDITATION PROGRAM STARTED

The initial steps in the evaluation of existing programs for the residency type of training have been undertaken. These followed the 2 day Conference on Accreditation of Field Training Areas in Ann Arbor in April (*A.J.P.H.* May, 1950, p. 642), at which 25 invited representatives of state departments of health, schools of public health, American Medical Association, American Board of Preventive Medicine and Public Health, Inc., U. S. Public Health Service and Children's Bureau, and A.P.H.A. were present.

The first need is for an approved list of residencies for public health medical personnel to be published by the Council on Medical Education and Hospitals of the American Medical Association and for use by the American Board of Preventive Medicine and Public Health, Inc., in selecting diplomates of the Board.

For other than medical public health personnel the Association will be the accrediting agency for field training areas. In the inspection of medical public health residencies other types of public health residencies will also be surveyed and an accreditation procedure for them worked out.

Haven Emerson, M.D., has been selected to serve as consultant for this project, which has been made possible through a three year grant from the W. K. Kellogg Foundation.

At the Ann Arbor Conference it was agreed to study such programs on a state basis with evaluation by states. Thus the state health department would be responsible for the overall supervision of the various local training areas in the state.

Letters of inquiry have gone to the state health officers. Inspection will begin almost immediately of those training programs that are essentially residency types of training of at least one year and that appear to have promise of meeting the desirable characteristics of such programs as outlined by the recent Ann Arbor Conference.

SUGGESTIONS FOR REVISION OF STANDARD METHODS SOLICITED

The Tenth Edition of *Standard Methods for the Examination of Water and Sewage* is now in preparation, and suggestions relative to changes or additions to the current edition are solicited. All communications should be addressed to F. Wellington Gilcreas, Chairman of the Subcommittee on Standard Methods for the Examination of Water and Sewage, Division of Laboratories and Research, State Department of Health, Albany 1, N. Y., who will refer them to the subcommittees concerned.

RESOLUTIONS COMMITTEE FOR ST. LOUIS MEETING

The members of the Resolutions Committee to serve at the 78th Annual Meeting in St. Louis, as announced by Lowell J. Reed, Ph.D., President, are:

Floyd C. Beelman, M.D., *Chairman*
G. F. Amyot, M.D.
Leroy E. Burney, M.D.
Ruth W. Hubbard, R.N.
Blucher A. Poole, C.E.
Ruth R. Puffer, Dr.P.H.
Edward S. Rogers, M.D.
W. G. Smillie, M.D.

Suggested resolutions may be sent to the Committee at the Association office now. As in the past, a resolutions box will be placed near the registration desk, Kiel Auditorium, St. Louis, at the time of the Annual Meeting. The time for closing the box, as determined by the Executive Board, will be announced at that time.

SCHOOLS OF PUBLIC HEALTH ACCREDITED FOR 1950–1951

On June 2, 1950, the Executive Board of the American Public Health Association took favorable action on the recommendations of the Committee on Professional Education concerning accreditation of schools of public health. Eleven schools are now accredited, among which the University of Pittsburgh Graduate School of Public Health is listed for the first time. All of the eleven schools are accredited for the Master of Public Health degree (M.P.H. in the United States; the equivalent degree at the University of Toronto is the Diploma of Public Health or D.P.H.). Nine of these institutions are accredited for the degree Doctor of Public Health (Dr.P.H.). Six institutions are accredited for master's degrees other than the M.P.H., with specialization in public health education (Certificate of Public Health—C.P.H. in Public Health Education—at the University of Toronto).

Below are listed the schools accredited for 1950–1951, the types of degrees for which they are accredited and the names of the deans or directors:

Institutions Accredited by the American Public Health Association for the Academic Year 1950–1951

Institution	Degrees Accredited: Master of Public Health (M.P.H.) *	Doctor of Public Health (Dr.P.H.)	Master's Degree † other than the M.P.H. in Public Health Education
CALIFORNIA, UNIVERSITY OF School of Public Health Berkeley 4, Calif. E. S. Rogers, M.D., Dean	x	x	
COLUMBIA UNIVERSITY School of Public Health New York 32, N. Y. H. W. Brown, M.D., Acting Director	x	x	x
HARVARD UNIVERSITY School of Public Health Boston 15, Mass. J. S. Simmons, M.D., Dean	x	x	x
JOHNS HOPKINS UNIVERSITY School of Hygiene and Public Health Baltimore 5, Md. E. L. Stebbins, M.D., Director	x	x	
MICHIGAN, UNIVERSITY OF School of Public Health Ann Arbor, Mich. H. F. Vaughan, Dr.P.H., Dean	x	x	
MINNESOTA, UNIVERSITY OF School of Public Health Minneapolis 14, Minn. G. W. Anderson, M.D., Director	x		x
NORTH CAROLINA, UNIVERSITY OF School of Public Health Chapel Hill, N. C. E. G. McGavran, M.D., Dean	x	x	x
PITTSBURGH, UNIVERSITY OF Graduate School of Public Health Pittsburgh 13, Pa. Thomas Parran, M.D., Dean	x	x	
TORONTO, UNIVERSITY OF School of Hygiene Toronto 5, Ontario, Canada R. D. Defries, M.D., Director	x		x
TULANE UNIVERSITY Department of Public Health New Orleans 13, La. M. E. Lapham, M.D., Dean	x	x	
YALE UNIVERSITY Department of Public Health New Haven, Conn. Ira V. Hiscock, Sc.D., Chairman	x	x	x

* Diploma in Public Health, D.P.H. at the University of Toronto

† Certificate in Public Health, C.P.H. at the University of Toronto

EMPLOYMENT SERVICE

The following pages present information for those seeking qualified public health personnel and for those seeking positions in public health.

This is a service of the Association conducted without expense to the employer or employee.

POSITIONS AVAILABLE

Supervisors and Public Health Nurses. Population 252,000; suburban, industrialized and rural areas; county seat 8 miles from Baltimore. Generalized service including progressive school health program; 50 field nurses. One month's vacation; 5 day, 35½ hour week; sick leave; retirement plan. For use of personal car, allowance of 7 cents per mile. Supervisor: degree and experience required; beginning salary $3,400 to $3,900, depending on qualifications; additional preparation in field of education, tuberculosis, orthopedics or mental hygiene preferred. Public Health Nurses, beginning salary $2,300 (for trainee) to $2,700, depending on experience and education. Dr. William H. F. Warthen, Health Officer, Baltimore County Health Department, Towson 4, Md.

Superintendent of Nurses, Tuberculosis Hospital. Responsible for the administration of nursing services for 260 bed tuberculosis hospital operated by City Health Department; 8 hour day, 40 hour week; vacation and sick leave; city retirement plan; maintenance optional at a cost of $40 per month for room and board. **Qualifications:** Graduation from an accredited school of nursing with special training in tuberculosis nursing and seven years of successful experience in professional nursing work, four of which shall have been in a supervisory capacity; college degree preferable; eligible for registration in Virginia. Salary range: $3,360–$3,864, dependent on qualifications; yearly increments. State age, education, and experience. Write: City of Richmond Department of Public Health, City Hall Annex, Richmond, Va.

Medical Director, Northeast Colorado Health Department; six counties, 70,000 population, generalized public health program, staff of 16, reasonable salary, liberal travel allowance. Paul R. Hildebrand, M.D., President, District Board of Health, Brush, Colo.

Health Officer—1. Jackson–Washington County Unit, West Florida, population 46,000, personnel 12, budget $41,629. 2. Okaloosa-Walton-Holmes County Unit, West Florida, population, 45,000, personnel 16, budget $53,800. Training or approximately one year's experience required, age 30–50. Beginning salary $6,900, plus travel 7½¢ per mile, amounting usually to $900–$1,000 per year. Apply to Wilson T. Sowder, State Health Officer, Florida State Board of Health, P.O. Box 210, Jacksonville, Fla.

Physician, Chief of Maternal and Child Health, City Health Department. Experience in pediatrics and obstetrics desirable. Prior public health experience not absolutely required. Salary $6,300–$6,900. Man preferred. Write: City Health Department, Richmond, Va.

Public Health Physician as Medical Director of Bi-County Health Department in southwestern Illinois on Ohio and Mississippi Rivers. Important public health job to be done. Salary $7,000. Apply Mr. Lloyd Cannon, Secretary, Alexander-Pulaski Bi-County Board of Health, Cairo, Ill.

Assistant Health Officer, tri-county health department, southeast. Responsibilities predominantly clinical in school health as well as in VD, TB, maternity and infancy clinics. Beginning salary $6,480 plus car maintenance and mileage, vacation, sick leave. Write **Box A-89,** Employment Service, A.P.H.A.

Staff Nurse—Visiting Nurse Association, permanent position—in area 20 miles from center of New York City—5 day, 40 hour week. Minimum salary $2,400, annually—salary increased for acceptable supervised experience and college credits. Write: **Box A-88,** Employment Service, A.P.H.A.

Public Health Nurses—Generalized program, emphasis on service to family and promotion of community participation, in rural county, population 40,000, towns, villages, and farm community. Staff, Medical Director, Senior, and three other nurses, Sanitarian, Office Manager and clerks. Salary $2,700 to $3,000, 5 day week, 4 weeks vacation. Car necessary, travel allowance. One position open immediately and one in September. Write: Director, Eaton County Health Department, Box 190, Charlotte, Mich.

Health Officer, full-time, town of 30,000,

convenient to medical and cultural centers. Salary $7,000, plus mileage. Write: Department of Health, Milford, Conn.

Public Health Engineer, to direct program of environmental sanitation in city health department and supervise staff of five. Salary $4,800–$5,200. Merit System, retirement benefits, 3 weeks vacation, 40 hour work week. Write: Commissioner, City Department of Health, Peoria 2, Ill.

Two Health Educators with public health background: One for school health education in Cook County tuberculosis program and the other for education in industries of metropolitan Chicago. Salaries open. Long-range programs with excellent opportunities. For information write: Mr. John E. Egdorf, Executive Secretary, The Tuberculosis Institute of Chicago and Cook County, 1412 W. Washington Blvd., Chicago 7, Ill.

Public Health Nursing Supervisor by City Health Department coöperating with public schools and county health unit. Combined population: 52,000. Health conscious community, with excellent clinical and research facilities. Health Department has full-time health officer, health educator, social worker, sanitation staff, mental health staff, medical clinic, nutrition programs, public health nursing supervisor, assistant supervisor and director of student program, a mental health consultant nurse, and twelve qualified staff nurses; generalized public health nursing program including school work and bedside care and an active student program in coöperation with the Public Health School and the Department of Health. New public health center. Degree and experience required. Salary depends on education and experience. Write to Dr. Viktor O. Wilson, City Health Officer, 415 4th Street, S.E., Rochester, Minn.

Health Officer for generalized program in county of 35,000, 100 miles west of Chicago. Salary range $7,200–$9,000, with $65 per month travel allowance. Retirement system; 3 weeks vacation; 2 weeks sick leave. Write: President, Lee County Board of Health, Dixon, Ill.

Medical Health Officer for Shelby-Effingham County Health Department; Central Illinois location; good schools; excellent rural communities; possibility of renting living quarters in Health Department building if no children; salary range $6,900–$9,000; may start above minimum; must have capacity for good public relations. Write to Mr. J. H. Griffin, Teutopolis, Ill.; or to Dr. O. G. Kauder, Findlay, Ill.

County Health Officer for Central Illinois, county of 37,000. Excellent schools, two colleges, excellent residential area. Plans under way to combine with another county to make health jurisdiction of 50,000. Salary range $7,500–$9,800. W. H. Newcomb, M. D., President, Morgan County Board of Health, Professional Building, Jacksonville, Ill.

Public Health Physicians for two District Offices of State Health Department; Southern Illinois locations; one in University town. Salary $5,760–$7,656, with possibility for promotion for capable individual. Excellent Civil Service and Retirement System. Write Roland R. Cross, M.D., Director, State Department of Public Health, Springfield, Ill.

Public Health Physician for Assistant Chief, Division of Local Health Administration, State Department of Public Health. Present salary range $5,760–$7,656. May start above minimum. Write Roland R. Cross, M.D., Director, State Department of Public Health, Springfield, Ill.

Public Health Physician for Champaign-Urbana Public Health District. Excellent grade and high schools; State University; Population 48,000. Salary range $7,500–$9,000. Competitive examination planned for late summer. Write Roland R. Cross, M.D., Director State Department of Public Health, Springfield, Ill.

Public Health Physician as Health Officer of a new single-county health department, beginning July 1. Opportunity of organizing first staff and programs. County of 20,000 on Mississippi River in northwestern Illinois. Salary range $7,200–$9,000. Qualified health officer may start above minimum. G. Alzeno, D.D.S., President, JoDaviess Co. Board of Health, Stockton, Ill.

Public Health Nurse for generalized program in county of 35,000; 100 miles west of Chicago. Salary $235 per month with $65 per month travel allowance, two weeks sick leave, and three weeks vacation with pay. Good retirement system. President, Lee County Board of Health, 123 E. First Street, Dixon, Ill.

Health Officer for New England industrial city of 22,000; formal training and some experience desirable for supervision of staff of three full-time and five part-time workers in generalized program; starting salary $6,500. Write: Mr. Lawrence J. Belisle, Chairman, Board of Health, North Adams, Mass.

Public Health Nurses. Arlington County, Va. Generalized service, including mental hygiene and orthopedics; 40

hour week, vacations, inservice education. Write: Mr. J. M. Davenport, Personnel Manager, Court House, Arlington, Va.

Public Health Physician III—Pediatrics for highly responsible professional and administrative medical work in planning and directing an extensive program of public health services on a state-wide basis, for furnishing consultative and advisory services to physicians and public health officials, and for effecting the distribution of federal and state funds to local health districts. Supervision over medical, technical, and clerical staffs. Applicants must be certified by the American Academy of Pediatrics. Starting salary: $7,560. Write: Division of Child Hygiene, Ohio State Department of Health, Columbus, Ohio.

Medical Laboratory Technician II—Two (2) vacancies, Diagnostic Laboratories, New Hampshire Department of Public Health, State Hospital, Concord, N. H. Salary: $2,700–$3,180 (probable under Reclassification effective July 1, 1950). For further information write: Supervisor, Merit System, State House, Concord, N. H.

POSITIONS WANTED

Public Health Dentist, M.P.H., veteran, dental administration with overseas armed forces, formerly school dentist for several years. Interested in public health position, preferably in Eastern states. Write: **Box D-6,** Employment Service, A.P.H.A.

Public Health Librarian, woman, training with 4 years organizational experience. Available October, 1950. Write **Box Li-1,** Employment Service, A.P.H.A.

Public Health Physician. Woman, single, M.P.H.; experience in school health, clinical medicine including obstetrics, teaching, and private practice. Interested in position with official or voluntary agency, public health or school health work, or teaching in college or university. Write: **Box Ph-21,** Employment Service, A.P.H.A.

Health Educator wants position in Southwest or West. Master of Public Health degree, teaching experience in elementary, secondary, and college levels, mature, hard worker, interested in permanent location. Write: **Box HE-24,** Employment Service, A.P.H.A.

Administrator, many years Army-VA hospital experience. Personnel Supervisor. Age 28. Wife R.N. Will relocate. For résumé, write: **Box C-15,** Employment Service, A.P.H.A.

ANNOUNCEMENTS

Overseas Assignments for Highly Qualified Public Health Specialists

To meet the increasing demand for experienced health personnel to staff technical health missions overseas which have been authorized by Congress, the Division of International Health, Public Health Service, is developing an intensive recruiting program.

Opportunities for overseas assignments in the higher grades are expected to develop for a number of physicians, scientists, health educators, sanitary engineers, sanitarians, nurses, administrators, and technicians. Some of the projects will involve employment by the Public Health Service and some will involve employment by the World Health Organization.

Members of technical health missions can assist foreign governments in establishing public health training, initiate health demonstrations, supervise specific projects, and serve in an advisory capacity to foreign government officials on health matters.

The various overseas health missions of the United States have been authorized by Congress with a view to strengthening mutual understanding between the people of the United States and the people of other countries. Such missions offer a challenge to American health experts to coöperate with the other people of the world in the development of human resources, as well as an opportunity to broaden their own medical and personal horizons.

Recruitment will be limited to highly qualified personnel possessing both expert knowledge in their technical specialties and the ability to inspire coöperation in a constructive program directed toward broad improvements in public health and the general advancement of human relationships.

Assignment will be made in the higher grades. Additional compensation will be provided in the form of allowances for overseas service.

Qualified health personnel may obtain application forms and further details concerning opportunities to participate in these programs by writing to the Chief, Division of International Health, Public Health Service, Federal Security Agency, Washington 25, D.C.

Openings for Training Specialists in the Public Health Service

The U. S. Public Health Service announces openings for training specialists at the various training stations of the Communicable Disease Center throughout several states. The duties involve working in coöperation

with state, local health department, or public health training station officials in organizing, conducting and coördinating class room, field, and laboratory training in specialized fields of public health to be given to professional and sub-professional personnel.

The following specialty options are included: 1. Entomology 2. Sanitary Engineering 3. Bacteriology 4. Veterinary Science 5. Chemistry 6. Biology 7. General (in fields such as Public Health Engineering, Public Health Education, Environmental Sanitation). Grades GS-7 through GS-13 will be rated at salaries of $2,825 through $7,600. For detailed information write to: U. S. Civil Service Commission, Washington 25, D. C. (Examination Announcement No. 5-82-6 (50), Unassembled, Form SF-57 & 5001ABC).

Advertisement

All communications should be sent to Burneice Larson, Medical Bureau, Palmolive Building, Chicago 11, Ill.

Opportunities Available

PHYSICIANS WANTED—(a) Public health physician to divide time between teaching public health and preventive medicine in medical school and carrying out administrative duties in city-county health department. (b) Director of student health department, one of country's largest universities; department well staffed; outstanding opportunity. (c) Health Officer; one of the islands of the Pacific; $9,500. (d) Public health specialist to direct Hansen's disease program for U. S. dependency; minimum, substantial salary including home, family maintenance. (e) Public health physician, experienced in teaching, to serve as chairman, department of preventive medicine, university medical school; West. (f) Director of public health; generalized program; staff of 25; department adequately financed; town of 35,000, short distance from university city; South. (g) County health officer; population, 350,000; headquarters in city of 200,000; U. S. dependency. (h) Public health physician to direct department serving county of 7,200 square miles with 12 incorporated cities; Pacific Coast.

WANTED—(a) Sanitary engineer; one of the islands in the Pacific; $7,700. (b) Health educator; generalized health educational program; university town of 95,000. (c) Public health engineer; minimum, three years' experience, preferably, in tropical or backward countries, required; $6,000, maintenance, other prerequisites; Arabia. (d) Health educator; duties consist of producing material in field of health; offices in headquarters of one of leading national professional organizations. (e) Health educator to serve as curator of education; ability to organize community program, conduct conferences, institutes required; man preferred; large city, university medical center. **PH7-2.**

WANTED—(a) Two well qualified public health nursing consultants and, also, nursing education consultant; Latin America. (b) Student health nurse; liberal arts college; Middle West. (c) Public health nurse to serve as industrial health consultant; insurance company; should be qualified to appraise medical programs in industrial plants. (d) Chief nurse and two staff nurses; department of health serving public schools; town of 100,000; Midwest. (e) Public health nurse to serve as superintendent of nurses, student health department, eastern university. (f) Public health supervisor and staff nurses; generalized program; Southern California. (g) Director of public health nursing; municipal health department; staff of 12 field nurses, one suprevisor; town of 80,000, located short distance from Chicago. **PH7-3.**

Opportunities Wanted

Public health dentist; D.D.S., M.S.D. (Children's Dentistry), M.P.H.; several years' teaching experience; for further information, please write Burneice Larson, Medical Bureau, Palmolive Building, Chicago.

Health educator; M.P.H., Harvard School of Public Health; several years, statistician; 8 years, health educator, state department of health; for further information, please write Burneice Larson, Medical Bureau, Palmolive Building, Chicago.

Public health engineer; B.S. (Chemical Engineering), M.S. (Sanitary Engineering), Harvard; 3 years, research chemist in industry; 7 years, industrial hygiene engineer in supervisory capacity, state health department; for further information, please write Burneice Larson, Medical Bureau, Palmolive Building, Chicago.

Public health nurse administrator; B.S. (Education); M.P.H.; 4 years, consultant in public health and school nursing, metropolitan health department; past several years, director, health education program, county health department; for further information, please write Burneice Larson, Medical Bureau, Palmolive Building, Chicago.

Public health physician; B.S., M.Sc., M.D., Dr.P.H., one of country's leading universities; several years, director, metropolitan health department; 2 years, associate professor and 4 years, chairman of Department of Preventive Medicine and Public Health, state university; Diplomate, American Board of Preventive Medicine and Public Health; for further information, please write Burneice Larson, Medical Bureau, Palmolive Building, Chicago.

Statistician; M.S., Ph.D. degrees; 5 years' teaching experience; past several years, director vital statistics division, city health department; for further information, please write Burneice Larson, Medical Bureau, Palmolive Building, Chicago.

hour week, vacations, inservice education. Write: Mr. J. M. Davenport, Personnel Manager, Court House, Arlington, Va.

Public Health Physician III—Pediatrics for highly responsible professional and administrative medical work in planning and directing an extensive program of public health services on a state-wide basis, for furnishing consultative and advisory services to physicians and public health officials, and for effecting the distribution of federal and state funds to local health districts. Supervision over medical, technical, and clerical staffs. Applicants must be certified by the American Academy of Pediatrics. Starting salary: $7,560. Write: Division of Child Hygiene, Ohio State Department of Health, Columbus, Ohio.

Medical Laboratory Technician II—Two (2) vacancies, Diagnostic Laboratories, New Hampshire Department of Public Health, State Hospital, Concord, N. H. Salary: $2,700–$3,180 (probable under Reclassification effective July 1, 1950). For further information write: Supervisor, Merit System, State House, Concord, N. H.

POSITIONS WANTED

Public Health Dentist, M.P.H., veteran, dental administration with overseas armed forces, formerly school dentist for several years. Interested in public health position, preferably in Eastern states. Write: **Box D-6,** Employment Service, A.P.H.A.

Public Health Librarian, woman, training with 4 years organizational experience. Available October, 1950. Write **Box Li-1,** Employment Service, A.P.H.A.

Public Health Physician. Woman, single, M.P.H.; experience in school health, clinical medicine including obstetrics, teaching, and private practice. Interested in position with official or voluntary agency, public health or school health work, or teaching in college or university. Write: **Box Ph-21,** Employment Service, A.P.H.A.

Health Educator wants position in Southwest or West. Master of Public Health degree, teaching experience in elementary, secondary, and college levels, mature, hard worker, interested in permanent location. Write: **Box HE-24,** Employment Service, A.P.H.A.

Administrator, many years Army-VA hospital experience. Personnel Supervisor. Age 28. Wife R.N. Will relocate. For résumé, write: **Box C-15,** Employment Service, A.P.H.A.

ANNOUNCEMENTS

Overseas Assignments for Highly Qualified Public Health Specialists

To meet the increasing demand for experienced health personnel to staff technical health missions overseas which have been authorized by Congress, the Division of International Health, Public Health Service, is developing an intensive recruiting program.

Opportunities for overseas assignments in the higher grades are expected to develop for a number of physicians, scientists, health educators, sanitary engineers, sanitarians, nurses, administrators, and technicians. Some of the projects will involve employment by the Public Health Service and some will involve employment by the World Health Organization.

Members of technical health missions can assist foreign governments in establishing public health training, initiate health demonstrations, supervise specific projects, and serve in an advisory capacity to foreign government officials on health matters.

The various overseas health missions of the United States have been authorized by Congress with a view to strengthening mutual understanding between the people of the United States and the people of other countries. Such missions offer a challenge to American health experts to coöperate with the other people of the world in the development of human resources, as well as an opportunity to broaden their own medical and personal horizons.

Recruitment will be limited to highly qualified personnel possessing both expert knowledge in their technical specialties and the ability to inspire coöperation in a constructive program directed toward broad improvements in public health and the general advancement of human relationships.

Assignment will be made in the higher grades. Additional compensation will be provided in the form of allowances for overseas service.

Qualified health personnel may obtain application forms and further details concerning opportunities to participate in these programs by writing to the Chief, Division of International Health, Public Health Service, Federal Security Agency, Washington 25, D.C.

Openings for Training Specialists in the Public Health Service

The U. S. Public Health Service announces openings for training specialists at the various training stations of the Communicable Disease Center throughout several states. The duties involve working in coöperation

with state, local health department, or public health training station officials in organizing, conducting and coördinating class room, field, and laboratory training in specialized fields of public health to be given to professional and sub-professional personnel.

The following specialty options are included: 1. Entomology 2. Sanitary Engineering 3. Bacteriology 4. Veterinary Science 5. Chemistry 6. Biology 7. General (in fields such as Public Health Engineering, Public Health Education, Environmental Sanitation). Grades GS-7 through GS-13 will be rated at salaries of $2,825 through $7,600. For detailed information write to: U. S. Civil Service Commission, Washington 25, D. C. (Examination Announcement No. 5-82-6 (50), Unassembled, Form SF-57 & 5001ABC).

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NEWS FROM THE FIELD

WHO NEWS

The Third World Health Assembly of WHO opened in Geneva on May 8. Among the various actions passed were the following:

1. A plan for the establishment of a Western-Pacific Regional Office.
2. The Fourth World Health Assembly to meet in Geneva in 1950. An invitation of the United States to meet in Washington was not accepted for economy reasons.
3. The United States contribution to the 1951 budget was reduced from 36 to 35 per cent. This is in line with Second World Health Assembly's resolution to reduce the United States contribution ultimately to one-third of the budget.
4. The report of the Expert Committee on Antibiotics was noted and the Executive Board and the Director-General asked to examine it and take any necessary action on its recommendations commensurate with WHO's resources. Chairman of the Expert Committee is Dr. E. Chain of the United Kingdom, co-discoverer of the uses of Penicillin. Among other members was Dr. Selman A. Waksman, discoverer of streptomycin.
5. A resolution agreed in principle with the Scandinavian proposal that the World Health Assembly meet every other year and requested the Director-General to draft amendments to the Constitution and transitional arrangements for submission to the Fourth World Health Assembly in 1951.
6. Owing to budgetary limitations, action against leprosy, brucellosis, salmonella infections, smallpox, and yellow fever will be limited to studies and international research coördination until technical assistance funds become available.

United States representatives to the Third World Health Assembly were:

Delegates

Dr. Leonard A. Scheele (Chairman), Surgeon General, Public Health Service
Mrs. John Whitehurst, Baltimore
Dr. Vlado A. Getting, Massachusetts State Commissioner of Health

Alternates

Dr. E. J. McCormick, Toledo, Ohio
Dr. H. van Zile Hyde, U. S. Representative on Executive Board, WHO
Howard B. Calderwood, Specialist in International Organizations, Department of State
Mark D. Hollis, Chief Sanitary Engineer Officer, Public Health Service

Malaria Teams in India

Four malaria teams are active in different parts of India. Guns and ammunition have been added to antimosquito equipment of field workers because of the danger of man-eating tigers. At Muniguda, one of the malaria subcenters, 10 persons were taken by a man-eater in 15 days.

The Peruvian Earthquake

Within three days after the devastating earthquake in Cuzco, Peru, the Pan American Sanitary Bureau, Regional Office of WHO, had sent an emergency air shipment of chlorinated lime for purifying drinking water, typhoid-paratyphoid vaccine, hypodermic syringes and needles, and plastic tubings for intravenous feedings and blood transfusions.

ENVIRONMENTAL MEDICINE DEPARTMENT

A new department of environmental medicine has been created at the Johns Hopkins University School of Hygiene and Public Health. The new department establishes for the first time, it is said, in a scientific medical center a program of research combining medical investigation and hospital treatment of disease produced by environment in the individual, and the work in hygiene and public health on such diseases as they affect the community.

Joseph L. Lilienthal, Jr., M.D., who has been appointed professor of the new department, will continue to carry on his work as head of the physiological division of the department of medicine at the Johns Hopkins Hospital and as associate professor of medicine at the

Hopkins School of Medicine. Anna Baetjer, M.D., is assistant professor of environmental hygiene in the department.

FIRST ATOMIC MEDICINE COURSE

What is said to be the first organized course in the medical aspects of atomic energy was recently opened at Jefferson Medical College, Philadelphia. The opening lecture on "The Problem of the Physician in an Atomic Disaster," was given by Col. James P. Cooney, Army Medical Corps officer, who is chief of the Radiological Branch, Division of Military Application, Atomic Energy Commission, and consultant in radiology to Major General R. W. Bliss, Army Surgeon General. The course, planned annually, consists of 18 hours of instruction to students on the junior level, four hours of which are given by Army experts in atomic medicine.

BORDER HEALTH ASSOCIATION

More than 200 delegates met April 12–14 in Chihuahua, Mexico, for the annual United States-Mexico Border Public Health Association meeting. Eighteen resolutions pertaining to disease control and sanitation measures were adopted at the sessions. Water studies, communicable disease control, venereal disease, and the four cases of human plague in New Mexico last year were among the subjects discussed. Wilton L. Halverson, M.D., director of public health for California, was named president-elect of the association.

TRUDEAU MEDAL TO DR. BARNWELL

John B. Barnwell, M.D., chief of the Tuberculosis Division of the Veterans Administration Department of Medicine and Surgery since 1946, received the 1950 Trudeau medal of the National Tuberculosis Association for his accomplishments in the fight against tuberculosis. The presentation was made in connection with the recent meeting of the National Tuberculosis Association in Washington, D. C. The accompanying citation reads in part that Dr. Barnwell has "improved the quality of treatment of tuberculosis in thousands of cases in many hospitals, and through his organization and support of a nation-wide research and treatment program, he has given us the means of evaluation of new treatments under protocols that give the answers months and even years earlier than we could have ever had them before."

DR. ROTHERMEL IN NEW POST

Robert E. Rothermel, M.D., M.P.H., formerly Associate Field Director of the American Public Health Association, has been appointed health officer of Pinellas County Health Department, St. Petersburg, Fla. Dr. Rothermel has been conducting an extensive research project in the evaluation of public health practices and the validity of the *Evaluation Schedule*. In this connection field studies were made in New York, Texas, Michigan, and Florida. He participated in the Massachusetts and Pennsylvania state studies. His studies have significantly advanced the development of the evaluation process in which the Committee on Administrative Practice has been engaged for many years.

SANITATION FIELD TRAINING MEET

The School of Public Health, University of North Carolina, was host to a Working Conference on Sanitation Field Training, April 25–28. Using the group discussion technique, the types, objectives, and principles of field training for environmental sanitation personnel were discussed. Attending were representatives from 12 states, the Public Health Service, and the W. K. Kellogg Foundation, which provided financial assistance to make the Conference possible. William C. Gibson, Educational Director of Sanitation Field Training at the School, was chairman of the meeting.

NATIONAL ASSOCIATION OF CLINICAL LABORATORIES MEETS

The 2nd annual meeting of the National Association of Clinical Laboratories was held in Philadelphia, April 13–15. Among the topics discussed were developments in laboratory sciences, formulation of ways of standardizing equipment and procedures, and qualifications for laboratories and personnel.

The following officers were elected:

President: Robert M. Johnston, Harrisburg, Pa.

Vice President: A. S. Michaelson, Chicago, Ill.

Eastern Regional Director: Joseph M. Chernaik, Flushing, N. Y.

Executive Secretary: Michael Horti, Richmond Hill, N. Y.

KENTUCKY ASSOCIATION OF SANITARIANS

Volume 1, Number 1, of *The Association News*, by the Kentucky Association of Sanitarians, began publication in May. Its stated purpose is to bring to the Kentucky sanitarians information and news of importance, particularly in relation to securing professional status for the group. James R. Sills, Owensboro, is secretary-treasurer as well as editor of the newsletter.

FLY CONTROL

The Illinois State Health Department has prepared a packet of aids to be used by local groups establishing and conducting fly control programs. Included in the packet are an outline of directions to the local committee, a list of available films, and other visual aid materials, a suggested chronological tabulation of actions to be taken, and news releases and editorials suitable for adaptation to a specific community. Write Roland R. Cross, M.D., Director, Springfield.

AUGUSTUS B. WADSWORTH LECTURE

Warfield T. Longcope, M.D., emeritus professor of Medicine, Johns Hopkins University Medical School, presented the first Augustus B. Wadsworth Lecture on "Clinical Implications of Recent Advances in the Medical Sciences" in Albany, May 24. The Lectureship, established by the staff of the Division of Laboratories and Research of the New York State Department of Health and the Council of the New York State Association of Public Health Laboratories, honors Dr. Wadsworth who retired as director of the Division of Laboratories and Research in 1945 after 31 years' continuous service.

A NEW LOCAL HEALTH BULLETIN

The Cleveland County (Okla.) *Health News* of the County Health Department began publication in January, 1950, in the form of a two page mimeograph bulletin. This coincided in point of time with the dissolution of the bi-county Cleveland-Garvin health unit into two separate county departments, each serving about 30,000 persons. O. R. Gregg, M.D., the Health Officer of the former consolidated district, is the County Commissioner.

HOME SAFETY MERIT AWARDS

The Home Safety Conference of the National Safety Conference has inaugurated annual merit awards for exceptional services to home safety education by local groups. Without being competitive they are designed to encourage more widespread and intensive activities in behalf of home safety. All organizations of whatever size that have a home accident prevention program are urged to take part. Communities will be classed by population and the only limitation indicated is that a group may not win more than one award in a single year.

It is hoped that the first award can be made at the 1950 National Safety Congress in October. Further information and the Merit Award Report Schedule may be secured from Safety Division, National Safety Council, 425 N. Michigan Avenue, Chicago 11.

Programs of Study for the Preparation of Public Health Nurses

The February, 1950, issue of *Public Health Nursing* lists thirty-four of the thirty-nine educational institutions which offer to graduate nurses programs of study in public health nursing leading to a degree. While the objectives are different, with resulting variations in admission requirements, length, and content, all programs meet the essential requirements of the National Organization for Public Health Nursing in theoretical and practical instruction, and are approved by the National Nursing Accrediting Service.

There are five institutions which offer a basic professional curriculum leading to a degree and which prepare their students for professional practice in public health nursing as well as other fields of nursing. The graduates of these degree programs are qualified for staff level public health nursing positions under direct nursing supervision.

Clearance has been obtained to reprint the list originally published in *Public Health Nursing*. Further information may be obtained from the person whose name is listed under each institution.

California

University of California, School of Nursing, Berkeley 4. Margaret A. Tracy, Dean.

University of California, School of Nursing, 405 Hilgard Ave., Los Angeles 24. Agnes O'Leary, Assistant Professor of Public Health Nursing.

Colorado

University of Colorado, School of Nursing, Boulder. Mrs. Pearl Parvin Coulter, Director of Public Health Nursing.

District of Columbia

The Catholic University of America, School of Nursing Education, Washington 17. Janet F. Walker, Director, Division of Public Health Nursing.

Hawaii, Territory of

University of Hawaii, Department of Nursing, Honolulu 10. Virginia A. Jones, Associate Professor of Public Health Nursing.

Illinois

Loyola University, School of Nursing, 820 N. Michigan Ave., Chicago 11. Essie Anglum, Chairman, Department of Public Health Nursing.

University of Chicago, Division of the Social Sciences, 5733 University Ave., Chicago 37. Mary M. Dunlap, Associate Professor, Nursing Education.

Indiana

Indiana University, Division of Nursing Education, School of Education, Bloomington. Eugenia K. Spalding, Director.

Massachusetts

Simmons College, School of Nursing, 300 The Fenway, Boston 15. Marjory Stimson, Professor of Public Health Nursing.

Michigan

University of Michigan, School of Public Health, Ann Arbor. Ella E. McNeil, Professor of Public Health Nursing.

Wayne University, College of Nursing, Detroit 1. Katherine Faville, Dean.

Minnesota

University of Minnesota, School of Public Health, Minneapolis 14. Margaret S. Taylor, Director, Course in Public Health Nursing.

Missouri

St. Louis University, School of Nursing, 1325 South Grand Boulevard, St. Louis 4. Sister Mary Geraldine Kulleck, Dean.

New Jersey

Seton Hall College, School of Nursing Education, 40 Clinton St., Newark 2. Caroline di Donato, Director, School of Nursing Education.

New York

Columbia University, Teachers College, Division of Nursing Education, 525 West 120th St., New York 27. Lillian A. Hudson, Professor of Nursing Education.

New York University, School of Education, Washington Square East, New York 3. Blanche L. George, Acting Director of Programs in Public Health Nursing.

St. John's University, School of Nursing Education, 303 Washington St., Brooklyn 1. Mary C. Mulvany, Dean.

Syracuse University, College of Medicine, Syracuse 10. Ruth E. TeLinde, Director, Department of Public Health Nursing.

University of Buffalo, School of Nursing, 25 Niagara Sq., Buffalo 2. Elizabeth M. Hanson, Administrator of the Public Health Nursing Program.

North Carolina

North Carolina College at Durham, Department of Public Health Nursing, Durham. Esther P. Henry, Director.

University of North Carolina, School of Public Health, Department of Public Health Nursing, Chapel Hill. Ruth W. Hay, Professor of Public Health Nursing.

Ohio

Western Reserve University, Frances Payne Bolton School of Nursing, 2063 Adelbert Rd., Cleveland 6. Ellen L. Buell, Director, Programs in Public Health Nursing.

Oregon

University of Oregon Medical School, Department of Nursing, 3181 S. W. Sam Jackson Park Rd., Portland 1. Eleanor Palmquist, Associate Professor of Public Health Nursing.

Pennsylvania

Duquesne University, School of Nursing, Pittsburgh 19. Mary V. Adams, Director, Public Health Nursing.

University of Pennsylvania, Department of Nursing Education, 3810 Walnut St., Philadelphia 4. Adaline Chase, Associate Professor in Public Health Nursing.

University of Pittsburgh, School of Nursing, Cathedral of Learning, Pittsburgh 13. Dr. Dorothy Rood, Chairman, Department of Public Health Nursing.

Puerto Rico

University of Puerto Rico, School of Tropical Medicine, San Juan. Celia Guzman, Assistant Professor of Public Health Nursing.

Tennessee

George Peabody College for Teachers, Nashville 4. Edna Lewis, Professor of Public Health Nursing.

Vanderbilt University, School of Nursing, Nashville 4. Helen M. Howell, Associate Professor of Public Health Nursing.

Texas

Incarnate Word College, San Antonio. Alice Marcella Fay, Acting Director, Program of Study in Public Health Nursing.

Virginia

Medical College of Virginia, Department of Public Health Nursing, 1222 East Marshall St., Richmond 19. Two programs of study in public health nursing: one for white students, Medical College of Virginia School of Nursing; one for Negro students, St. Philip School of Nursing. C. Viola Hahn, Director, Department of Public Health Nursing.

Washington

University of Washington, School of Nursing, Seattle 5. Kathleen M. Leahy, Director, Program of Study in Public Health Nursing.

Wisconsin

Marquette University, College of Nursing, 3058 North 51st St., Milwaukee 10. Anna Hassels, Director, Program of Study in Public Health Nursing.

University of Wisconsin, School of Nursing, 1402 University Ave., Madison 6. Martha R. Jenny, Associate Professor of Public Health Nursing.

The following basic professional curricula have been approved for public health nursing:

Connecticut

Yale University, School of Nursing, New Haven. Elizabeth S. Bixler, Dean, School of Nursing.

New York

Cornell University - New York Hospital School of Nursing, 525 East 68th St., New York 21. Virginia M. Dunbar, Dean.

Skidmore College, Department of Nursing (New York University Hospital), 303 East 20th St., New York 3. Agnes Gelinas, Chairman, Department of Nursing.

Tennessee

Vanderbilt University, School of Nursing, Nashville 4. Julia Hereford, Dean, School of Nursing.

Washington

University of Washington, School of Nursing, Seattle 5. Mrs. Elizabeth S. Soule, Dean, School of Nursing.

ILLINOIS HEALTH OFFICERS ELECT

The spring meeting of the Illinois Association of Medical Health Officers held recently in Springfield elected the following officers:

President: S. N. Mallison, M.D., Health Officer, District Health Office 6

Vice-President: L. L. Fatherree, M.D., Will County Health Officer

Secretary-Treasurer: Herbert Ratner, M.D., Oak Park Health Commissioner

NEW PREVENTIVE MEDICINE DEPARTMENT

The University of Illinois School of Medicine has established a department of preventive medicine. New courses in preventive medicine will be offered to 3rd and 4th year students in which the social aspects of medicine will be emphasized. Harry F. Dowling, M.D., has been named professor and head of the department. He has most recently been clinical professor of medicine, George Washington University School of Medicine, Washington, D. C.; author of *Acute Bacterial Diseases: Their Diagnosis and Treatment.* His research has been concerned primarily with pneumonia, meningitis, and the toxicity of sulfonamides and antibiotics.

ITALIAN PUBLIC HEALTH ASSOCIATION

With over 500 public health physicians from Italy and other countries, the VI National Congress of the "Federazione Italiana Medici Igienisti" was held in Naples and Salerno, March 21–24. The main theme of the Congress was "the public health physician in a modern sanitary organization."

On March 24, in the City Hall of Salerno, the representatives of the Hygienist Associations of France, Italy, and Switzerland signed the constitution of the Latin Federalist Union of Hygienist Doctors.

LASKER AWARDS TO SCIENCE WRITERS

William L. Laurence, science writer of the *New York Times* and Herbert and Dixie Leppert Yahraes, free lance writers have received the first Lasker Awards for the best writing on medical science and public health. The awards consisting of $500 and statuettes of the Winged Victory of Samothrace were presented at the recent annual dinner in Washington, D. C., of the National Association of Science Writers. The Nieman Foundation for Journalism administers the awards.

Mr. Laurence's award was for his *New York Times* articles on the development of cortisone and ACTH. The Yahraes award was given for "Our Daughter is an Epileptic" in *Collier's Magazine.*

SCIENCE ACADEMY INCREASES MEMBERS

Detlev W. Bronk, D.Sc., President of Johns Hopkins University, was elected president of the National Academy of Sciences at its recent annual meeting in Washington. It elected 30 new members bringing the number up to 462, the highest in its history. Heretofore, the membership had been limited to 450, but this was changed to allow for 30 new elections annually.

Two foreign associates were added, Dr. Charles Herbert Best, Canadian co-discoverer of insulin, and Dr. Albert Jan Kluyver, Professor of Microbiology, Technical University of Delft, The Netherlands.

KANSAS HAS A TRI-COUNTY UNIT

The Kansas State Health Officer, F. C. Beelman, M.D., announces that in June, 1950, a health officer was supplied for the tri-county local health unit made up of Dickinson, Ottawa, and Saline Counties with a population of about 65,000. This is the first example of three county coöperation in health service in the state. It comes just about a year after the first bi-county unit in the state, Butler and Greenwood Counties, was organized. (*A.J.P.H.* June,

1949, p. 831.) It is further reported that Harper and Sumner Counties are discussing coöperation.

PERSONALS

MARGARET ARNSTEIN, R.N., M.P.H.,* Chief, Division of Nursing Resources, U. S. Public Health Service, Washington, D. C., was awarded an Honorary Doctorate in Science by Smith College, Northampton, Mass., on June 3 at the 75th anniversary of the founding of the College.

HENRY BRILL, M.D., has been appointed Director of Craig Colony for Epileptics in Livingston County, N. Y.

GERTRUDE E. BUNDY, R.N., has been appointed Executive Secretary of the Livingston County Tuberculosis and Health Association, (N. Y.), succeeding RUTH CLOUSER, resigned.

GEORGE S. BUIS, Assistant Executive Secretary, American College of Hospital Administrators, has been appointed Director of the Program in Hospital Administration, Yale University School of Public Health, succeeding CLEMENT C. CLAY, M.D., who organized the Yale program in 1947.

CHESLEY BUSH, M.D.,* Medical Officer in the tuberculosis service of the California State Department of Public Health, has been awarded the annual California medal of the State Tuberculosis and Health Association for meritorious service in the campaign against tuberculosis.

ALEXANDER M. CARR, M.D.,* formerly Bradley County (Tenn.) Health Officer is now Director of West Virginia Health District No. 2, made up of Greenbrier, Monroe, and Pocahontas Counties, with headquarters in Lewisburg.

RALPH E. DWORK, M.D.,† for the last year Health Officer in charge of the Tremont and Fordham-Riverdale districts in New York City, has joined the Ohio Department of Health as Chief of the Division of Tuberculosis. He succeeds ARNOLD B. KURLANDER, M.D.,* who has been made chief of the Bureau of Local Health Services and who has been acting in both positions for several years.

MARTHA M. ELIOT, M.D.,* Assistant Director General of the World Health Organization and GOVE HAMBIDGE, Chief of Information for the Food and Agriculture Organization, recently received 1950 American Design Awards of $1,000 presented annually by Lord & Taylor, New York City.

CURTISS M. EVERTS, JR.,* Oregon State Sanitary Engineer, was named Chairman of the Conference of State Sanitary Engineers at its recent annual meeting in Washington, D. C.

J. C. GEIGER, M.D.,* Director of Public Health, City and County of San Francisco, Calif., has received from the Dominican Republic the additional grade of Grand Officer, with star of the Order of Honor and Merit of Juan Pablo Duaret, "For distinguished service in the public health in Latin American Countries and particularly to the Dominican Republic." This Decoration was first bestowed in the grade of Commander in 1945.

T. LYLE HAZLETT, M.D.,* has retired as Medical Director of the Westinghouse Electric Corporation, Pittsburgh, but will continue in the field of industrial medicine on a consulting basis with offices at 3509 Fifth Avenue, Pittsburgh 13, Pa., and as head of the Department of Industrial Hygiene of the School of Medicine, University of Pittsburgh.

EDWARD CHARLES HOLMBLAD, M.D.,* Treasurer and Managing Director of the American Association of Industrial Physcians and Surgeons, received the 1950 Knudsen Award at the banquet of the American Association of Industrial Physcians and Surgeons in Chicago on April 29.

ARCHIBALD L. HOYNE, M.D.,† retired after serving 30 years as Medical Superintendent of the Chicago Municipal Contagious Disease Hospital, was recently honored by friends and former students with a dinner in the Congress Hotel of that city.

R. A. KENNEDY, M.D.,* a former member of the faculty of Western Ontario University, Canada, is Director of the Monongalia County Health Department, West Virginia. Dr. Kennedy is filling a vacancy created in March, 1949, when M. I. ROEMER, M.D.,* resigned to accept a position on the faculty of Yale University School of Public Health.

DOUGLAS J. KING, has been appointed assistant to Q. S. BALL, Manager of the Professional Products Division of the Heyden Chemical Corporation, New York City.

KENNETH F. MAXCY, M.D., Dr.P.H.,* Professor of Epidemiology at Johns Hopkins University School of Hygiene and Public Health, Baltimore, was recently elected to the National Academy of Sciences.

GLADYS NITE, formerly instructor in the Baylor University School of Nursing, has been appointed as a clinical instructor in the University of Houston College of Nursing, Tex.

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* Fellow A.P.H.A.
† Member A.P.H.A.

HELEN PETRALIA, of Athens, Greece, chief nurse of the Ministry of Hygiene in Greece, and President of the Hellenic Nurses Association, in May began a 4 month study in the United States of the role of the nurse in public health programs in this country, and the organization and administration of schools of nursing. Her program is being arranged by the Division of International Health of the U. S. Public Health Service.

ALTON S. POPE, M.D.,* Deputy Commissioner of Public Health, Massachusetts State Department of Public Health, was recently made President-Elect of the National Tuberculosis Association.

CAROLINE R. RAINBOLT, of Charleston, was recently appointed the first Executive Secretary of the West Virginia Heart Association.

ELIZABETH P. RICE,† assistant professor of medical social work, Harvard School of Public Health, was elected President of the American Association of Medical Social Workers.

DALTON ROBERTS, previously with the Colorado State Merit System Council, became personnel officer for the State Department of Public Health.

DEAN W. ROBERTS, M.D., M.P.H.,* who has served since 1945 as Chief of the Maryland State Department of Health's Bureau of Medical Services, has been appointed to the newly created position of Deputy Director of Health. His duties will include general supervision of the local health programs carried out in the counties of Maryland.

MILDRED ESTHER SCOTT, M.D.,* is on loan from the Division of State Grants, U. S. Public Health Service, to the Florida State Board of Health to serve as medical consultant to the state's various county health units on the field technical staff which is headed by L. L. PARKS, M.D.*

HOWARD E. SEYMOUR, associate in the Personnel Services of the National Tuberculosis Association since 1946, has been appointed personnel assistant to the New York State Committee on Tuberculosis and Public Health.

WADE N. STEPHENS, M.D., of Salt Lake City, Utah, is now Health Officer of the Putnam-Flagler Counties Health Unit, Florida, with headquarters in Palatka.

THOMAS C. STOWELL,† publicity agent and Assistant Director of Public Health Education, New York State Health Department since 1932, became Director of the Motion Picture Unit in the New York State Department of Commerce on June 1. He organized this unit and the State Radio Bureau 5 years ago while on leave of absence from the State Health Department.

ERNEST C. THOMPSON, Ph.D.,† has retired from the Borden Company after nearly 40 years of service. He also served as Chairman of the Standards Committee of the American Dry Milk Institute for some 20 years. He is continuing his work as a consultant in food and dairy technology with headquarters at 1792 E. 22 Street, Brooklyn, N. Y.

JOHN M. WHITNEY, M.D.,* who has been serving the Midwestern Area of the American National Red Cross, St. Louis, Mo., has been transferred to headquarters of the American National Red Cross Eastern Area at Alexandria, Va., where he assumed the duties of Medical Director—Assistant Manager on May 1.

EDWIN G. WILLIAMS, M.D.,† is Chief of a new Radiological Health Branch in the Division of Engineering Resources, Bureau of State Services, established by the U. S. Public Health Service in California to coördinate PHS activities in the field of radiological health, to establish and maintain contact with health personnel regarding the public health aspects of nuclear energy and ionizing radiation, and to disseminate pertinent information in this new health field.

The following personnel changes have been announced by the New York State Department of Health:

VELMA BURBRIDGE, assistant district supervising nurse in the Oneonta District Office, has been promoted to district supervising public health nurse.

WILLIAM H. LARKIN,* has been promoted to the position of associate sanitary engineer assigned as chief, Water Pollution Control Section, Bureau of Environmental Sanitation at the Albany office.

EMMA LOIS SHAFFER,† who has been district supervising public health nurse in the Jamestown District Office, has been provisionally appointed to the position of consultant public health nurse. (Obstetrics)

RALPH C. SWEENEY,† regional sanitary engineer has been transferred from the Rochester Regional Office to the White Plains Regional Office.

DEATHS

CHARLES J. BARONE, M.D.,† City Health Officer, Highland Park, Mich. (Health Officers Section.)

J. HOWARD BEARD, M.D.,* Professor of Hygiene and University Health Officer, University of Illinois, Urbana, since 1916, died April 5 (Public Health Education Section).

CHARLES R. DREW, M.D., Medical Director of the first blood donor service set up in New York City early in 1941 by the American Red Cross, was killed in an automobile accident on April 1.

JOHN MARK GLENN,† former General Director of the Russell Sage Foundation, died April 20 at the age of 91. Mr. Glenn, one of the oldest living members of the A.P.H.A., would have been presented with a forty-year membership certificate at the next Annual Meeting had he lived (Unaffiliated).

WILLIAM D. HAYES, M.D., 63, Director of the Division of Health Education, Oklahoma State Department of Health, died April 21 of coronary thrombosis.

GEORGE HESS, M.D., Chief Medical Officer of the United States Penitentiary in Atlanta, with the rank of Medical Officer in the U. S. Public Health Service, died May 12 in Atlanta.

LEON R. KRAMER, D.D.S.,* Director, Division of Dental Hygiene, Kansas State Board of Health, died May 21 of a heart attack at the age of 55 (Dental Health Section).

FRANK E. MCCORD, M.D.,† Health Officer, Morgan County Health Department (Ill.), died April 11 (Health Officers Section).

C. W. MUNGER, M.D.,† Director, St. Luke's Hospital, New York, N. Y., died February 7 (Health Officers Section).

CYRUS F. NEWCOMB, M.D.,† Acting Director, Champaign-Urbana Health District (Ill.) since 1946, died April 4 (Health Officers Section).

Conferences and Dates

American Public Health Association. Headquarters, Kiel Auditorium, St. Louis, Mo. October 30–November 3.

Coming in July, August, and September:

American Congress of Physical Medicine. Hotel Statler, Boston, Mass. August 28–Sept. 1.

American Hospital Association. Atlantic City, N. J. Sept. 18–21.

American Library Association. Cleveland, Ohio, July 16–22.

American Water Works Association:
Minnesota Section. St. Paul, Minn. Sept. 6–8.
New York Section. Saranac, N. Y. Sept. 7–8.
Ohio Section. Columbus, Ohio. Sept. 28–29.
Rocky Mountain Section. Santa Fe, N. M. Sept. 27–29.
West Virginia Section. Huntington, W. Va. Sept. 13–14.
Wisconsin Section. Oshkosh, Wis. Sept. 19–21.

Fifth International Congress for Scientific Research and the Social Fight Against Cancer. Sorbonne—Paris, France. July 17–22.

First International Congress of Diseases of the Chest. Carlo Forlanini Institute, Rome, Italy. Sept. 17–22.

First International Heart Congress. Paris, France. Sept. 3–9.

International Conference of Social Work. Paris, France. July 16–22.

International Congress of Housing and Town Planning. Amsterdam, Holland. August 27–Sept. 2.

Minnesota Public Health Conference. Nicollet Hotel. Minneapolis, Minn. Sept. 25–26.

National Association of Housing Officials. Pacific-Northwest Regional. Gaffney's Lake Wilderness Resort. Seattle, Wash. Sept. 28–29.

National Conference on Family Relations. University of Denver. Denver, Colo. Sept. 5–7.

National Education Association. St. Louis, Mo. July 3–7.

National Urban League. Grand Rapids, Mich. Sept. 3–8.

North Carolina Public Health Association. Robert E. Lee Hotel. Winston-Salem. Sept. 7–9.

Sixth International Congress of Radiology. London, England. July 23–30.

* Fellow A.P.H.A.
† Member A.P.H.A.

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